EXECUTIVE SUMMARY

1.0 INTRODUCTION

The United States Coast Guard (USCG), the United States Maritime Administration (MARAD), and the California State Lands Commission (CSLC) have prepared this draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the Cabrillo Liquefied Natural Gas (LNG) Deepwater Port (the Project) proposed by BHPB Billiton LNG International, Inc. (BHPB, the Applicant). The purpose of this EIS/EIR is to inform the public and local, State, and Federal permitting agencies and other decision-makers about the potential environmental impacts of the proposed Project.

The proposed Project would include the construction and operation of a new offshore LNG floating storage and regasification unit (FSRU), offshore and onshore pipelines, and related onshore facilities. LNG carriers would transport LNG to the FSRU where it would be stored, regasified to its original gaseous form, and then distributed via pipeline throughout the Southern California region. Total LNG storage capacity on the FSRU would be approximately 72 million gallons (273,000 cubic meters [m^3]). The FSRU would receive approximately two to three LNG shipments per week (104 to 156 LNG carriers per year) and would deliver an anticipated 800 million cubic feet (22.7 million m^3) per day of natural gas to shore.

The FSRU would be moored in Federal waters, about 12.2 nautical miles (NM) (14 miles or 22.5 kilometers [km])[1] offshore of Ventura County and Los Angeles County, California. Figure ES-1 shows the location of the FSRU and the distances to major points of interest. The Applicant's stated Project design life is 40 years, although the Federal license for the proposed deepwater port would have no expiration date.

This EIS/EIR has been prepared to fulfill the requirements of the National Environmental Policy Act (NEPA); the Council on Environmental Quality (CEQ) Regulations for implementing NEPA (Title 40 Code of Federal Regulations [CFR], Parts 1500-1508); the Deepwater Port Act of 1974 (33 USC §§ 1501 *et seq.*); the California Environmental Quality Act (CEQA) (Public Resources Code, Section 21000 *et seq*.); and the CEQA implementing guidelines (California Code of Regulations [CCR] Title 14, Section 15000 *et seq*.)

In addition to describing the proposed Project, the purpose of this document is to:

- Describe both adverse and beneficial potential environmental impacts of the proposed Project;
- Describe Project alternatives; and

[1] This EIS/EIR uses nautical miles (NM) as the preferred unit for all large distances referred to in offshore discussions and statute miles for all large distance onshore (1 NM ≈ 1.15 statute miles or 1.8 km). Metric units are also given. A list of acronyms and abbreviations is provided after the Table of Contents.

- Recommend mitigation measures that would reduce significant adverse impacts to the maximum extent feasible.

The U.S. Environmental Protection Agency (USEPA); the U.S. Department of the Interior (DOI) Minerals Management Service (MMS), and the U.S. Fish and Wildlife Service (USFWS) have joined the Coast Guard, MARAD, and the CSLC as cooperating agencies in the preparation of this EIS/EIR.

1.2 NEED FOR THE PROJECT

The overall Project purpose, need, and objectives are to:

- Increase the natural gas supply in the United States and the State of California; and
- Increase natural gas supply reliability and diversity.

The California Energy Commission (CEC) estimates that demand for all uses of natural gas will grow by approximately one percent annually over the next ten years, even taking into account increased conservation and the use of renewable energy. California currently is the second largest natural gas consumer in the nation and is expected to use 2.4 trillion cubic feet (tcf) by 2013. The CEC has thus recommended that California secure and diversify its sources of natural gas in order to ensure a sufficient and reliable supply of natural gas. Among the CEC's recommendations is to construct LNG receiving terminals that can be used as potential future supplies of natural gas from new sources and, according to the CEC, the proposed Project could supply approximately 13 percent of California's average daily needs.

1.3 PUBLIC INVOLVEMENT

Public involvement included a public scoping period that began February 27, 2004, with publication of the Notice of Intent/Notice of Preparation (NOI/NOP) in the Federal Register, and ended March 31, 2004. The NOI/NOP was also provided to the California State Clearinghouse for release on February 24, 2004.

The NOI/NOP briefly described the Project, provided a preliminary list of environmental issues, invited written public comments on the scope and content of the environmental information and analysis that should be included in the EIS/EIR, and listed the date and location of the public scoping meetings. The NOI/NOP was sent by electronic mail to 94 persons and mailed via certified mail to 63 interested parties and was posted on the Federal Docket, the CSLC website, and a public website maintained by the Lead Agencies' EIS/EIR consultant for interested parties to download a copy. Nine hundred postcards announcing the scoping meetings and open houses were mailed to landowners along the proposed and alternative routes for the pipeline. Notices for scoping meetings were placed in the Malibu Surfside News, the Signal (Santa Clarita), the Malibu Times, and the Ventura County Star.

During the scoping period, the USCG and the CSLC held three open houses and three scoping meetings: four in Oxnard on March 15, 2004, and two in Malibu on March 16, 2004. Approximately 300 persons attended the scoping meetings and open houses in Oxnard and Malibu. Transcripts of each public scoping meeting and all written comments are available on the Federal Docket and are part of the public record for the Cabrillo Deepwater Port Project (Docket Numbers: USCG-2004-16877-240, USCG-2004-16877-241, and USCG-2004-16877-242). Table 1.5-1 (see Section 1.0, "Introduction") summarizes the issues raised during public scoping and where the discussion of these issues can be found in the draft EIS/EIR. The public was also afforded the opportunity to comment on a website that includes information about the Project in both English and Spanish.

The draft EIS/EIR has been filed with the U.S. Environmental Protection Agency (USEPA), submitted to the California State Clearinghouse, and mailed to Federal, State, and local agencies, elected officials, newspapers, public libraries, and other interested parties. A formal notice that the draft EIS/EIR is available for review and comment has been published in the Federal Register and posted in the Ventura County and Los Angeles County Clerk offices. The public has 45 days to review and comment on the draft EIS/EIR both in the form of written comments and at public meetings held in communities near or adjacent to the Project area. All comments received on the draft EIS/EIR will be addressed in the final EIS/EIR.

2.0 SUMMARY DESCRIPTION OF THE PROPOSED PROJECT AND ALTERNATIVES

As proposed, LNG from the Pacific basin would be delivered by LNG carriers, offloaded to the FSRU, and re-gasified using a controlled process on the FSRU. The natural gas would be delivered to shore via two new 21.1-mile (33.8 km) long, 24-inch (0.6 meter [m]) diameter natural gas pipelines laid on the ocean floor. These pipelines would come onshore at Ormond Beach near Oxnard, Ventura County. New 14.3-mile (24-km) and 7.7-mile (11.9-km) long pipelines would also be constructed to connect the offshore pipeline with the existing SoCalGas intrastate pipeline system to distribute natural gas to customers throughout the Southern California region (see Figure ES-2).

The FSRU would be permanently moored and would use a turret system (a tower-like revolving structure) that would allow it to rotate (weathervane) around a fixed point. The FSRU, which would be designed for loading LNG from a side-by-side, moored LNG tanker, would be vessel-shaped, double-sided, double-bottomed, and 938 feet (286 m) long and 213 feet (65 m) wide, with a water displacement of approximately 190,000 deadweight tons (193,050 metric tons).

Ships would be berthed and unloaded on the starboard (right) side of the FSRU. The FSRU would store LNG in three Moss spherical tanks. Onboard utilities and systems associated with FSRU operations would include electric power generation and distribution, instrumentation and controls, and fire and safety systems. The deepwater port would include all marine systems, communications, navigation aids, and equipment necessary to safely conduct LNG carrier operations and receive product.

A 200-foot (60.9 m) wide right-of-way (ROW) would be used for construction and would be established permanently in the offshore areas in which the 24-inch (0.762-m) pipelines would be laid. The submarine pipelines would be buried from about the 43-foot (13-m) water depth approximately 0.3 mile (0.48 km) offshore to the shore crossing and a proposed metering station at the existing Reliant Energy Ormond Beach Generating Station in Oxnard, where horizontal directional drilling (HDD) would be used to install the pipelines under the beach. The metering station, a small facility to meter gas from the FSRU to be constructed on the Reliant property, would include a pig launcher/receiver and odorant station. At the new metering station a new 14.3-mile (23.0-km) 36-inch diameter pipeline would begin and would end at the Center Road Valve Station. The proposed underground pipeline route would be as follows:

- Begin at the new metering station within the Reliant Energy Ormond Beach Generating Station;
- Run north along the Southern California Edison (SCE) electric transmission line ROW;
- Turn east on Hueneme Road, north on Naumann Road, west on Etting Road, and north on Hailes Road to Pleasant Valley Road;
- At Pleasant Valley Road the route would head southwest for approximately 1,000 feet (305 m) and then turn north through agricultural fields;
- Continue through agricultural fields, cross 5th Street (Highway 34), continue north along Del Norte Boulevard, and cross Sturgis Road to U.S. Highway 101;
- Turn east along U.S. Highway 101 frontage road, then turn north and cross U.S. Highway 101;
- Proceed northeast to Central Avenue, then southeast along Central Avenue and northeast along Beardsley Road;
- Head northeast for approximately 0.25 (0.4 km), then northwest along a flood control channel (the Santa Clara Diversion) to Santa Clara Avenue; and
- Follow Santa Clara Avenue northeast, then continue northeast at Los Angeles Avenue, north at La Vista Avenue, west at Center Road, and terminate at the Center Road Valve Station.

Another new 30-inch (0.75-m) diameter pipeline would extend approximately 7.7 miles (12.4 km) between Quigley Valve Station and the Honor Rancho Storage Facility in Santa Clarita. The route this pipeline would take is summarized below.

- From the Quigley Valve Station, the pipeline would parallel the existing Line 225 Pipeline in a westerly direction to Via Princessa, then proceed west on Via Princessa to Oak Ridge. The pipeline would proceed north within Oak Ridge, then north within San Fernando Road to Magic Mountain Parkway.
- The pipeline would then proceed in a northwesterly direction within Magic Mountain Parkway to McBean Parkway, where it would proceed north to Scott Avenue and then northwest to Stanford Avenue.

- Then the pipeline would parallel the existing Line 225 Pipeline ROW and would cross the South Fork Santa Clara River, the Santa Clara River, and San Francisquito Creek.
- The pipeline would then proceed northwest for approximately 1 mile (1.6 km) to the Honor Rancho Valve Station and Storage Facility through an existing utility ROW containing four pipelines and seven overhead power lines.

3.0 PROJECT ALTERNATIVES

A full range of reasonable alternatives was considered, including the No Action or No Project Alternative. Alternatives that were carried forward are shown on Figure ES-3 and include: alternative deepwater port locations; alternative onshore pipeline routes; and alternative shore crossings. Tables 6.2-1, 6.2-2, and 6.2-3 in Section 6.0, "Mitigation Monitoring Program," compare the offshore, onshore, and shore-crossing alternatives.

No Action/No Project Alternative

The No Action/No Project Alternative would eliminate the environmental effects identified in this EIS/EIR and the Southern California region would not receive the approximately 800 million cubic feet (22.7 million m^3) of natural gas per day projected from the proposed Project. The State's and the nation's energy needs would need to be met in other ways.

Alternative Deepwater Port Location — Santa Barbara Channel (Ventura Flats)

One alternative deepwater port location and the subsea pipeline, shore crossing, and onshore pipeline required to serve a deepwater port at that location were considered. Under this alternative, the FSRU would be moored in the Santa Barbara Channel, the shore crossing would be at Mandalay Beach, and the onshore pipeline would follow Gonzales Road to Rose Road to Los Angeles Road to Santa Clara Road to La Vista Avenue to the Center Road Valve Station. This alternative would have more offshore recreational, fishing, and visual impacts and would potentially disrupt more local business onshore during construction than the proposed Project. This alternative is not environmentally preferable to the proposed Project.

Onshore Pipeline Route Alternatives

Two alternative onshore pipeline routes from a shore crossing at the Reliant Energy Ormond Beach Generating Station to the Center Road Valve Station were considered. Each alternative was feasible, but one would cross through densely populated areas and business districts such that, during construction, activities would be disrupted. The other alternative would require more stream crossings than the proposed Project. Therefore, neither is environmentally preferable to the proposed Project.

One alternative to the Line 225 Pipeline Loop route was evaluated, primarily to provide an alternative stream crossing. This alternative is not environmentally preferable to the proposed Project.

Alternative Shore Crossings

Two alternative shore crossings to the Reliant Energy Ormond Beach Generating Station shore crossing (in addition to the Mandalay shore crossing that is part of the Santa Barbara Channel alternative) were evaluated. These alternative routes would have the same HDD exit point but would connect to the SoCalGas pipeline ROW at different locations — Arnold Road and Ventura County Naval Air Base, Point Mugu. Both of these crossings would have slightly greater impacts on sensitive species.

4.0 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The EIS/EIR analyzes the environmental issues associated with the construction, operation and, to a lesser extent, the decommissioning of the proposed Project. (The latter would require a separate environmental review at the end of the Project life.) The impact analysis uses information provided by the Applicant in the initial applications and subsequent data requests; field investigations; public scoping; literature research; alternative analysis; contacts with Federal, State, and local agencies; and other information from public groups and organizations. The analysis indicates that the Project would result in certain adverse environmental impacts along with beneficial economic impacts.

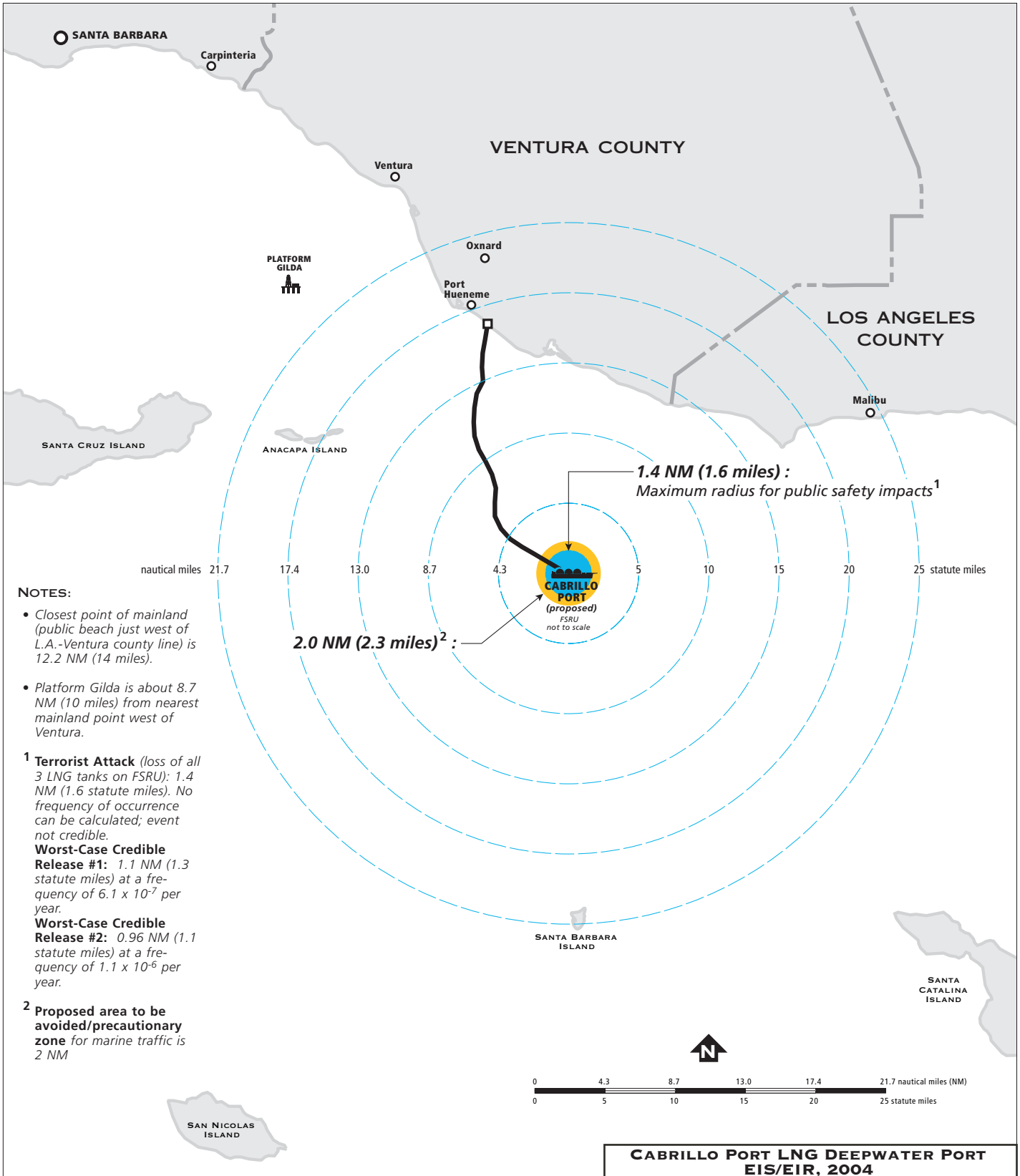
In addition to an Operations Manual and Security Plan for the FSRU and pipelines, the Applicant has prepared or would prepare specific plans that include measures to avoid or mitigate potential impacts. These plans include: a Spill Prevention, Control, and Countermeasures (SPCC) Plan; an HDD Contingency Plan; a Construction Fugitive Dust Plan; a Stormwater Pollution Prevention Plan (SWPPP); an Erosion Control Plan; a Weed Management Plan; and a Biological Resources Mitigation and Monitoring Plan.

As part of the environmental analysis, specific mitigation measures were also identified that are feasible and that, when implemented, would reduce potential adverse impacts of Project construction and operation to a level of insignificance. Table ES-1 is a listing of the anticipated impacts of the Project and measures that would be implemented to mitigate those impacts.[2] Applicant-proposed mitigation measures are denoted as **AMM**, and Agency-proposed mitigation measures are denoted as **MM**. A Mitigation Monitoring Program is provided in Section 6.0 of this EIS/EIR.

The environmental effects of constructing and operating the Project as proposed are summarized below.

[2] This table is included because of the overriding concern by the public regarding safety. A similar table is presented for each environmental issue discussed in the full EIS/EIR; these additional issue-area tables are not included here due to space limitations.

Source: Ecology and Environment, Inc., 2004



NOTES:

- *Closest point of mainland (public beach just west of L.A.-Ventura county line) is 12.2 NM (14 miles).*
- *Platform Gilda is about 8.7 NM (10 miles) from nearest mainland point west of Ventura.*

[1] **Terrorist Attack** *(loss of all 3 LNG tanks on FSRU): 1.4 NM (1.6 statute miles). No frequency of occurrence can be calculated; event not credible.*
Worst-Case Credible Release #1: *1.1 NM (1.3 statute miles) at a frequency of 6.1 x 10^{-7} per year.*
Worst-Case Credible Release #2: *0.96 NM (1.1 statute miles) at a frequency of 1.1 x 10^{-6} per year.*

[2] **Proposed area to be avoided/precautionary zone** *for marine traffic is 2 NM*

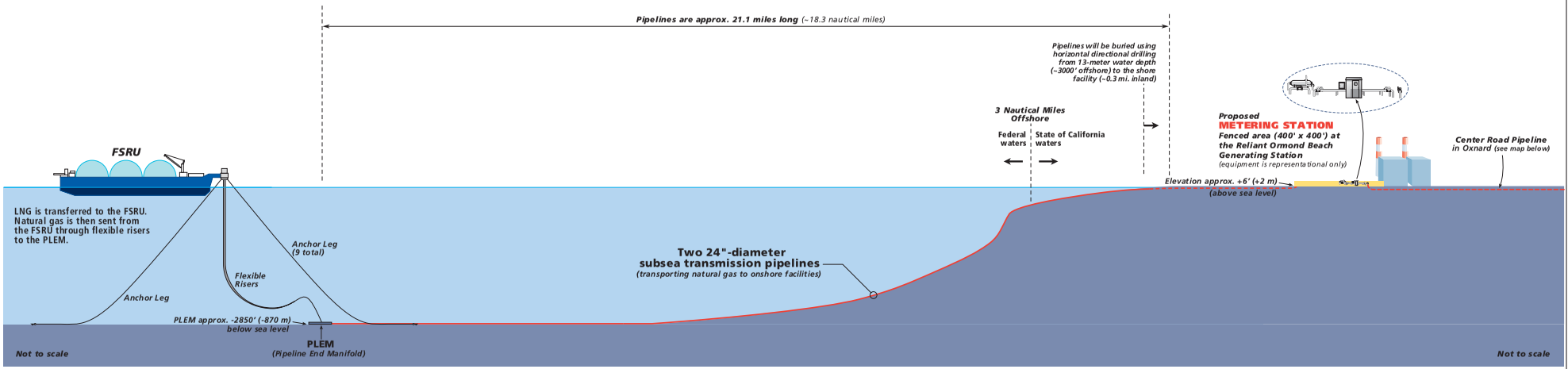
CABRILLO PORT LNG DEEPWATER PORT EIS/EIR, 2004

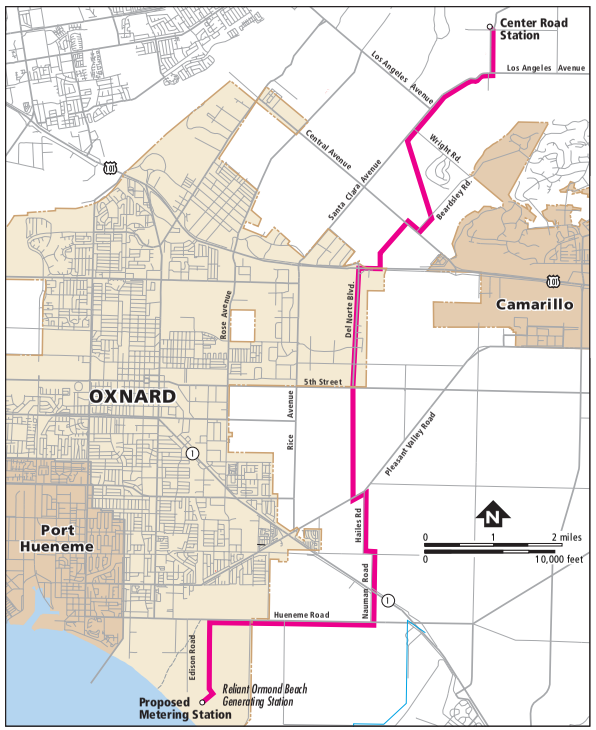
Ecology and Environment, Inc. 001883.CA04.03.00.k2 (BHP Cabrillo Port folder) 10/20/2004

Figure ES-1

Distances from the FSRU to Major Points of Interest

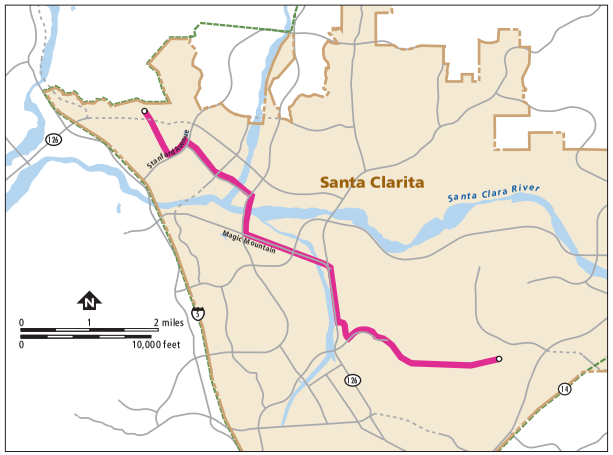
Source: Ecology and Environment, Inc.





Center Road Pipeline
City of Oxnard and Ventura County

Additional pipeline system construction required to receive gas from Cabrillo Port



Line 225 Pipeline Loop
Santa Clarita, Los Angeles County

CABRILLO PORT LNG DEEPWATER PORT EIS/EIR, 2004

Figure ES-2

Proposed Project Components

(see Figure ES-3 for alternatives considered)

Source: Ecology and Environment, Inc.

119°50'W 119°40' 119°30' 119°20' 119°10' 119°00' 118°50' 118°40' 118°30'W

34°30'N 34°20' 34°10' 34°00' 33°50'N

SANTA BARBARA COUNTY
SANTA BARBARA
Goleta Point
Carpinteria
Ojai
Rincon Point
Santa Paula
Approx. location of 3-nautical mile line (California jurisdictional waters)
Pitas Point
100
200
Santa Barbara Channel (Ventura Flats)
Gonzales Road Pipeline
Ventura
VENTURA COUNTY
Simi Valley
SANTA BARBARA CHANNEL (alternative)
2
(not to scale)
RELIANT ENERGY MANDALAY GENERATING STATION SHORE CROSSING (alternative)
PLATFORM GILDA (not to scale)
Oxnard
Camarillo
Port Hueneme
Thousand Oaks
LOS ANGELES COUNTY
MANDALAY PIPELINE (alternative)
NORTHBOUND COASTWISE TRAFFIC LANE
SEPARATION ZONE
SOUTHBOUND COASTWISE TRAFFIC LANE
CHINESE HARBOR (alternative) 3
SAN PEDRO POINT (alternative) 10
ANACAPA ISLAND
SANTA CRUZ ISLAND
11 SMUGGLER'S COVE (alternative)
HUENEME CANYON
Point Mugu
MUGU CANYON
4 OFF DEER CANYON (alternative)
5 DEER CANYON (alternative)
Malibu
Santa Monica
Malibu Point
Point Dume
Santa Monica Bay
100
200
300
400
30
ALT. ROUTE 3
ALT. ROUTE 2
ALT. ROUTE 1
CINMS 6 Nautical Mile Boundary
ANACAPA (alternative) 12
(not to scale)
CABRILLO PORT (proposed)
Current CINMS Working Boundary Concept (as of 9/22/03)
DUME CANYON
SANTA MONICA CANYON
PACIFIC OCEAN

Line 225 Loop Pipeline (proposed)
For detail see Figure 3.4-2
Santa Clarita
For detail see Figure 3.4-1
Center Road Pipeline (proposed)

0 5 10 15 20 25 miles
0 25 kilometers

Proposed project

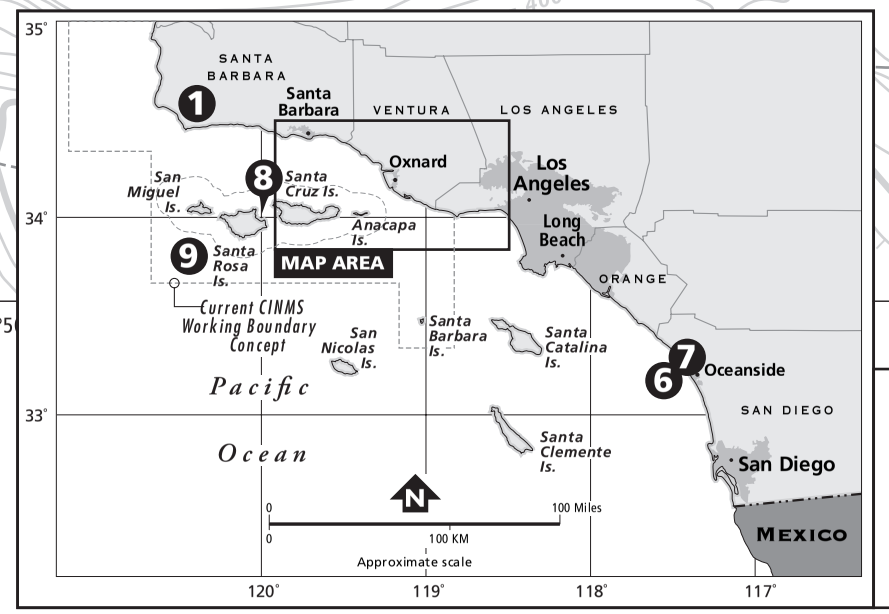
ALTERNATIVES CARRIED FORWARD
- Santa Barbara Channel
- Other alternatives

Offshore alternatives considered but eliminated

RELIANT ENERGY ORMOND BEACH SHORE CROSSINGS and PIPELINE CONNECTIONS
- Reliant Energy Ormond Beach/Center Road *(proposed)*
- Arnold Road/Arnold Road Pipeline *(alternative)*
- Point Mugu/Casper Road Pipeline *(alternative)*

Map depicts approximate locations based on best available data.

Bathymetric contours are in fathoms.



ALTERNATIVE PROJECT LOCATIONS

1 Point Conception	4 Off Deer Canyon	7 Camp Pendleton	10 San Pedro Point
2 Santa Barbara Channel (Ventura Flats)	5 Deer Canyon	8 Bechers Bay	11 Smuggler's Cove
3 Chinese Harbor	6 Off Camp Pendleton	9 West Side of Channel Islands	12 Anacapa

CABRILLO PORT LNG DEEPWATER PORT EIS/EIR, 2004

Figure ES-3

Cabrillo Port Liquefied Natural Gas Deepwater Port and Proposed Project Alternatives Considered

001883.CA04.03.00.g3 (BHP Cabrillo Port folder) 10/20/2004

4.1 PUBLIC SAFETY

Early on, the lead agencies determined that an Independent Risk Assessment would be required to address public questions about the safety of the proposed Project and commissioned a team of experts to prepare a site-specific evaluation of the design concept and security plans for the deepwater port, taking into consideration local environmental conditions and the concerns expressed by the public during scoping. Public safety issues associated with the storage and offshore handling of LNG, pipeline transport of unodorized and odorized natural gas, and onshore storage and injection of a natural gas odorant were evaluated. The Independent Risk Assessment includes an evaluation of the worst-case (events that would lead to the most serious potential impacts to public safety) consequences associated with the proposed LNG deepwater port and provides the basis for the impact analysis.

In evaluating the potential public safety issues for the proposed Project, a structured process was used to:

- Identify and evaluate potential hazards;
- Define scenarios to bracket the range of potential accidents (resulting either from operations or intentional attacks);
- Use state of the art computer models to define the consequences for each scenario (including the worst-case scenario);
- Compare the results to existing safety thresholds and other criteria; and
- Make the results available to decision makers and the public while also ensuring that a release of relevant information would not in turn create a security issue.

The results of the Independent Risk Assessment are summarized here. However, since the Independent Risk Assessment Report contains sensitive security information (SSI), it cannot be made available to the general public, but it has been, and will be, made available for review by Federal, State, and local agency staffs and elected officials with safety and security responsibilities and clearances.

Table ES-2 summarizes the major laws and regulatory standards the Project would be required to meet and the primary agencies that would be responsible for approving the design criteria for the Project and for its inspection and monitoring. It shows the main topics that are covered by each regulation or law. It also shows the specific regulations that would be applied to the various components of the proposed Project such as the offshore deepwater port and the natural gas transmission pipelines. These regulations specify the minimum requirements the Applicant would be required to meet.

Table ES-2 Major Laws, Regulatory Requirements, and Plans for Public Safety

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
Federal	
Deepwater Port Act, as amended, 33 U.S.C. 1501 *et seq.*	• **Establishes the regulatory regime** for the location, ownership, construction, and operation of deepwater ports in waters beyond the territorial limits of the U.S.
33 CFR 148, Subparts A and G - *USCG*	• Note: A more detailed discussion of these requirements is provided in Marine Safety and Security Requirements, contained in Appendix C to this EIS/EIR. • **Site evaluation and pre-construction testing.** Prescribes requirements for activities involved in site evaluation and pre-construction testing at potential locations and that may pose a threat to human health or welfare. • **Environmental review criteria for deepwater ports**. Defines how the Deepwater Port Act interacts with other Federal and State laws; requires construction plan to incorporate best available technology and industry practices. Defines general design, construction, and operational criteria for deepwater ports.
33 CFR 149, Subpart s A, B, D, E, and F - *USCG*	• Note: A more detailed discussion of these requirements is provided in Marine Safety and Security Requirements, contained in Appendix C to this EIS/EIR. • **Deepwater Ports: Design, Construction, and Equipment.** Describes the process for submitting alterations and modifications affecting the design and construction of a deepwater port. • **Pollution prevention equipment.** Defines requirements for discharge containment, valves, monitoring and alarm systems, and communications equipment. • **Firefighting and fire protection equipment**. Defines minimum requirements for firefighting equipment, detection and alarm systems. • **Aids to navigation**. Prescribes requirements for lighting, marking, and sound signals. • **Safety-related design and equipment**. Prescribes requirements for construction and design standards and specifications for safety-related equipment and systems.
49 CFR 173 and 177 - *RSPA OPS*	• **Transportation of hazardous materials in portable tanks and by highway.** Specifies requirements, including: o minimum requirements for portable tanks and cargo tank motor vehicles; o requirements for driver training, inspections, shipping papers, segregation of hazardous materials; o requirements for engine shutoff and bonding and grounding between containers to prevent accidental ignition due to static electricity for Class 3 materials (flammable and combustible liquids).

Table ES-2 Major Laws, Regulatory Requirements, and Plans for Public Safety

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
33 CFR 150, Subparts A, B, C, D, E, F, H, J - *USCG*	• Note: A more detailed discussion of these requirements is provided in Marine Safety and Security Requirements, contained in Appendix C to this EIS/EIR. • **Deepwater Ports: Operations.** ○ **Operations Manuals**. Defines requirements for Operations Manuals. ○ **Inspections.** Defines requirements for deepwater port inspections, including annual self-inspection and notification requirements upon receipt of classification society certifications. ○ **Personnel.** Describes requirements for ensuring personnel are qualified. ○ **Vessel navigation.** Describes requirements for radar surveillance, tanker advisories, and rules of navigation. ○ **Cargo transfer operations**. Describes requirements for inspection and testing of cargo transfer systems and for allowing or stopping cargo transfers. ○ **Operations (Emergency Equipment).** ○ **Aids to navigation**. Prescribes required inspection and testing. ○ **Safety zones, no anchoring areas, and areas to be avoided**.
49 CFR 193 - *RSPA OPS, USCG*	• **Liquefied Natural Gas Facilities: Federal Safety Standards**. Mandates compliance with American National Standards Institute/National Fire Protection Association (ANSI/NFPA) 59A, Standard for the Production, Storage, and Handling of Liquefied Natural Gas (LNG).
Pipeline Safety Law of 1994 49 U.S. Code (U.S.C.) 60101, *et seq.*	• Defines the framework for pipeline safety regulation in the U.S.
Pipeline Safety Improvement Act (PSIA) of 2002, P.L. 107-355, 49 U.S.C. 60101, *et seq.* - *RSPA OPS, CSLC, CPUC*	• **Tightens Federal inspection and safety requirements** to include mandatory inspections of oil and natural gas pipelines with a history of safety problems within the next five years, with all pipelines to be inspected within ten years. All pipelines will then be inspected at 7-year intervals. • **Corrective actions**, including physical inspection, testing, repair, or replacement can be ordered by RSPA OPS. • **Pipeline integrity management programs** must be developed and implemented by pipeline operators, which includes identifying areas where risks may be greater due to the population density (high consequence areas [HCAs]) and implementing a series of actions to mitigate the potential hazards in these areas. • **Emphasizes the one-call notification system** and encourages pipeline operators to voluntarily adopt and implement best practices for notification of leaks and ruptures. • **Public education programs** must be established by pipeline operators to provide municipalities, schools, and other entities with information to prevent pipeline damage and to prepare for any pipeline emergencies, including the one-call notification system, possible hazards from accidental releases from a pipeline, and actions to take in the event of a release.

Table ES-2 Major Laws, Regulatory Requirements, and Plans for Public Safety

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
Pipeline Safety Improvement Act (PSIA) of 2002, P.L. 107-355, 49 U.S.C. 60101, *et seq.* - *RSPA OPS, CSLC, CPUC (continued)*	• **Coordinated environmental review and permitting process** is defined to expedite conducting any necessary pipeline repairs. • **Maximum civil penalties** that can be assessed against pipeline operators for violations of pipeline safety standards have increased. • **Whistleblower Protections.** The PSIA significantly strengthens the enforcement of pipeline safety laws and includes specific protections for employees who provide information to the federal government about pipeline safety. • **Mandates continued Federal pipeline safety research and development** by the National Institute of Standards and Technology, Department of Transportation, and Department of Energy.
49 CFR 190 - *RSPA OPS*	• **Pipeline Safety Programs and Procedures**. Describes availability of informal guidance and interpretive assistance and establishes framework for inspections and for safety enforcement actions.
49 CFR 191 - *RSPA OPS, CSLC, CPUC*	• **Annual reports, incident reports, and safety-related condition reports.**
49 CFR 192 - *RSPA OPS, CSLC, CPUC*	• **Minimum Federal safety standards** for transportation of natural gas and other gases, including minimum materials properties such as yield strength; design formulas; standards for valves, flanges, fittings, supports and anchors; pipeline pressure controls; welding requirements; installation designs and limitations; corrosion control and monitoring; testing and inspection requirements; remedial and repair measures; environmental protection and safety requirements; procedural manuals for operations, maintenance, and emergencies; damage prevention programs; incident investigation; gas odorization; and requirements for abandonment or deactivation of facilities. • **Pipeline Integrity Management Programs** for high consequence areas are described in Subpart O to this Part. • **Changes to public education requirements** have been proposed (69 FR 35279, June 24, 2004) to require pipeline operators to develop and implement public education programs based on the provisions of the American Petroleum Institute's (API) recommended practice (RP) 1162, "Public Awareness Programs for Pipeline Operators."
49 CFR 199 - *RSPA OPS, CSLC, CPUC*	• **Drug and alcohol testing,** which requires pipeline operators to test covered employees as well as contractor employees for the presence of prohibited drugs and alcohol.
Emergency Planning and Community Right-to-Know Act (EPCRA) 40 CFR 355 App. A	• **Not applicable for the major chemical use associated with the LNG facility and pipeline operation;** neither methane, urea, nor the chemicals proposed to be used to odorize the natural gas are listed as hazardous or extremely hazardous substances under this statute. Chemical use during construction activities may trigger reporting for some chemicals.
Clean Air Act (CAA) Section 112(r), Risk Management Program 40 CFR 68	• **Not applicable.** The natural gas pipelines are not a "stationary source." No major use on the FSRU of extremely hazardous substances as defined under EPCRA.

Table ES-2 Major Laws, Regulatory Requirements, and Plans for Public Safety

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
State	
- *CSLC*	• **Design Criteria and Standards.** CSLC's Marine Facilities Division is currently developing design criteria and evaluating industry standards that will apply to LNG terminals in California. It is unclear at this time whether the proposed Project will be subject to these requirements.
CSLC Regulations, Article 3.3 – Oil and Gas Production Regulations, Section 2132 (h) – Pipeline Operations and Maintenance. - *CSLC*	• **Pipeline Operation and Maintenance Requirements.** Specifies minimum requirements for all oil and gas pipelines on State tide and submerged lands, including general requirements for written procedures, controls on maximum operating pressures, communications, external and internal corrosion control, pipeline inspections, inspection reports, and safety equipment and procedures.
- *CSLC*	• **Seismic Standards for Pipelines. The CSLC requires compliance with the following guidance:** 1. "Guidelines for the Design of Buried Steel Pipe," American Lifeline Alliance, July 2001. 2. "Draft Guideline for Assessing the Performance of Oil and Natural Gas Pipeline Systems in Natural Hazard and Human Threat Events," American Lifeline Alliance, April 2004. 3. "Guidelines for the Seismic Design of Oil and Gas Pipeline Systems," American Society of Civil Engineers, 1984.
California Public Utilities Commission General Order 112-E - *CPUC*	• **CPUC General Order 112-E**, "State of California Rules Governing Design, Construction, Testing, Operation, and Maintenance of Gas Gathering, Transmission, and Distribution Piping Systems" prescribes rules that must be followed in addition to Federal pipeline safety standards. • **Reporting.** Public utilities operating pipelines in California (in this case, SoCalGas) must notify the CPUC of any pipeline incident or safety-related condition that must be reported to RSPA OPS under Federal regulations. They must also report incidents to the CPUC that would not trigger reporting under Federal rules, e.g., for gas releases with property damage of more than $1,000 and for any incident that involved fire, explosion, or underground dig-ins. • **Engineering design review.** Engineering design information must be submitted to the CPUC in advance of any change in maximum allowable operating pressure, or construction, reconstruction, or reconditioning of an existing pipeline.
California Accidental Release Program (Cal ARP)	• **Not applicable.** The natural gas pipelines are not a "stationary source." Chemicals proposed to be stored at the onshore odorization facility are neither extremely hazardous substances as defined under EPCRA nor are they regulated substances in California.

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In particular, the Pipeline Safety Improvement Act of 2002 imposed several regulatory changes such as additional preventive inspections, maintenance measures, and public education in high consequence areas (HCAs), i.e., areas where the population density near the pipeline is high, outdoor areas where groups of people regularly congregate (such as a park or beach area), and where nearby land uses include services or housing for populations that would be difficult to evacuate (e.g., day care centers, nursing homes, medical centers, schools, etc.).

The siting, design, construction, installation, and operation of all parts of the proposed Project would be subject to in-depth scrutiny by the USCG, the CSLC, and a number of other participating Federal and State agencies. The Applicant has proposed a highly structured approach to engineering and design, with clear decision points where interim approval from the lead agencies will be required before moving forward with additional work. This would provide an additional level of control for the lead agencies and a mechanism to address agency concerns throughout the course of the Project.

Engineering evaluations would include stringent design reviews by agency staff and thorough verification of engineering analyses by a qualified independent third party. The Project would be subject to routine monitoring and inspections by Federal and State agencies during construction and installation, as well as throughout the life of the Project. Specific commitments or required mitigation measures identified in this EIS/EIR to reduce the potential impacts on public safety would be incorporated into the USCG license and/or the CSLC lease; enforcement of these requirements would be ensured through the Mitigation Monitoring Program, which sets out the Agencies' framework for tracking compliance with these requirements.

The Applicant would develop a comprehensive Operations Manual and Security Plan for deepwater port operations (for the FSRU and berthed LNG carriers) in accordance with USCG requirements. These plans and procedures must be approved by the USCG prior to receiving a license and would be subject to regular review, inspection, and updating throughout the life of the facility.

The Applicant would also develop written operation, maintenance, testing, and inspection procedures for the offshore and a portion of the onshore natural gas transmission pipelines; SoCalGas would implement similar procedures for the onshore facilities, including the operation of the onshore odorization facility. Written emergency plans and procedures and schedules for drills and exercises would also be developed with input and coordination with local emergency services, including county and local fire, police, and emergency medical services, port authorities, and the USCG.

The Agencies would consider the protection of energy assets and public safety from potential terrorist attacks to be an integral part of meeting minimum safety requirements during construction and operation of the proposed Project. The Agencies expect that emergency plans developed by the Applicant and SoCalGas would be coordinated with Federal and State agency efforts to identify and prevent terrorist threats.

The public safety issues for this EIS/EIR were identified based on comments received during public meetings. Table 4.2-1 provides a summary of the public comments and the location in the EIS/EIR where they are addressed. More than 40 technical and agency experts worked together to develop an independent risk analysis, which included workshops. Potential hazards and incident scenarios were further identified and evaluated by a well-qualified group of technical professionals and Federal and State agency staff at a Hazard Identification (HAZID) workshop and at a multi-day Security and Vulnerability Analysis (SVA) workshop. Estimated frequencies of incidents for the offshore and onshore natural gas pipeline were developed based on historical incident data for natural gas transmission lines. The potential areas of impact for onshore pipeline incidents were determined based on current regulatory definitions for the potential impact radius (PIR).

The Independent Risk Assessment team evaluated the potential consequences from LNG incidents based on site-specific marine traffic patterns, local meteorology and sea conditions, and incident scenarios identified for further analysis during the HAZID and SVA. Computer modeling of LNG releases from the FSRU was conducted to provide conservative (in a manner more protective of the environment) estimates of areas that would be impacted if there were an LNG release that subsequently was ignited. Several different scenarios were developed to cover a range of potential accidents.

As discussed, the location of the FSRU, which is the only facility where LNG would be present, is located offshore, remote from significant populations. The most common potential accidents would be confined to the safety zone, an area circumscribed by a proposed 1,640-foot (500-m) radius around the FSRU where public marine traffic would be prohibited from entering (see Figure ES-1).

However, modeling results indicate that the impacts of a major LNG release and subsequent fire would extend beyond the proposed safety zone. The worst-case consequences, however, would not extend beyond the proposed 2-NM (3.7-km) radius for a designated area to be avoided or a precautionary zone around the FSRU, where the public would be allowed but would be advised to avoid through notices on nautical charts and through regular Securite broadcasts.

Based on long-term national statistics for natural gas transmission pipelines, the frequency of a significant pipeline accident occurring that would affect the public is calculated at four in one hundred thousand per pipeline mile per year; this risk analysis indicates that such an accident would be unlikely to occur. The frequency is expected to be even lower because the pipelines would be new and would incorporate design and operational improvements learned from past accidents. In addition, more stringent engineering design requirements would be imposed, and additional mitigation has been recommended.

However, the Agencies have, for the purposes of the public safety analysis conducted for this Project, conservatively identified (that is, in a manner more protective of the environment) the potential consequences associated with onshore pipeline accidents as Class I, because even though the probability of an accident occurring is low, members

of the public could be harmed if an accident were to occur. Whether or not anyone would actually be injured would depend on many factors such as the nature of the accident, the number of people in the area at the time, the response time by emergency personnel such as firefighters, and other factors. The recommended feasible mitigation measures have been designed to reduce both the frequency and the consequences of any potential accidents.

4.2 MARINE TRAFFIC

The FSRU mooring would be located in the territorial seas of the United States. The subsea pipeline route crosses the Northbound and Southbound Coastwise Traffic Lanes, the Separation Zone, and parts of the Point Mugu Sea Range not normally used for missile impacts.

Marine activities associated with site preparation and installation of the FSRU, subsea pipelines, and shore crossing may have the following temporary impacts: (1) disruption of marine traffic and increase in risk of vessel collision; (2) congestion at the local port because of a lack of pier space, increased channel traffic, and increased demand for pilot services; (3) increased burden on maritime traffic tracking systems, and (4) potential disruption of operations at the Point Mugu Sea Range.

To address impacts associated with increased maritime traffic and risk of collision, mitigation measures to be used during construction would include using Notices to Mariners, using guard boats, having daily safety briefings, making and heeding Securite broadcasts, using light and sound signals on the pipe-laying barges, coordinating daily with the U.S. Navy, and avoiding as much as possible the waters of the Point Mugu Sea Range. Construction of the proposed Project would not increase congestion at the local port, Port Hueneme, because this port would not be used during construction.

Impacts from facility operations include the following: (1) the transit of LNG carriers, tugboats, and supply/crew vessels to and from the FSRU, which may increase or disrupt maritime traffic and increase the risk of vessel collision; (2) transiting LNG carriers, which may disrupt operations at the Point Mugu Sea Range or the SOCAL Range Complex; and (3) increased congestion at the Port of Hueneme.

To decrease the potential of risk of vessel collision, increased vessel traffic, and Naval operations disruption, the location of the FSRU would be placed on navigational charts; the Applicant would coordinate regularly with the U.S. Navy and the USCG Captain of the Ports of Los Angeles and Long Beach, and would provide them with the LNG carrier schedule. The Applicant also would make Securite broadcasts when LNG carriers are docking or undocking. In addition, the FSRU would have light and sound signals and an Automatic Identification System, and a tugboat would patrol the safety zone around the FSRU. Officials at the Port of Hueneme believe that the increased vessel traffic and berths at the Port from the Cabrillo Port facility would have negligible effects on port operations.

4.3 AESTHETICS

The evaluation of aesthetics is necessarily subjective. The presence of the FSRU would change the visual character of the ocean view for recreational boaters traveling several miles offshore, including visitors on whale-watching and Channel Islands National Park boat trips. Night lighting during pipeline construction and operations would be visible from the shore and to residents living in the foothills and higher elevation areas in Malibu, and from the top of Anacapa Island, thereby altering the nighttime viewshed.

However, The lights would be visible on the horizon and would not be distinguishable from a vessel's lights. From the shoreline, and particularly from higher elevations, the FSRU would be seen but would appear as a thickening on the horizon. The long-term presence of the FSRU would cause a long-term significant adverse change in the visual character of the open ocean for boaters who travel near it. However, there are no mitigation measures that would reduce this to a less than significant impact.

Construction-related impacts would be short-term and less than significant. During construction, onshore staging areas and construction equipment would be visible to residents and travelers on City Image Corridors/Scenic Highways, but this would be a temporary impact. Mitigation measures would include installing berms and fences around construction staging areas, and strategically positioning lights.

4.4 AGRICULTURE AND SOIL RESOURCES

The onshore pipelines in the City of Oxnard would be constructed through a largely agricultural area. In contrast, the City of Santa Clarita has few agricultural areas and none of these areas would be affected by the installation of the onshore pipelines.

During construction, approximately 48 acres (19 hectares [ha]) of farmland of statewide importance and 55 acres (22 ha) of prime farmland soil would be disturbed temporarily. The expansion of the Center Road Valve Station would result in the permanent loss of approximately 0.1 acre of orchard. The Applicant would compensate the landowner for the loss of his or her farmland.

Potential impacts of construction include increased compaction of the soil, soil mixing, reduced fertility, poor revegetation, and the introduction of noxious weeds. The Applicant would minimize soil mixing, reduced fertility, and the introduction of noxious weeds by implementing a Weed Mitigation Plan in which topsoil would be salvaged and replaced. The Applicant also has proposed a dust suppression plan to ensure protection against a potential pest infestation. The Agencies' staffs have recommended that the Applicant water orchards/crops if requested by the farmer.

4.5 AIR QUALITY

The proposed Project would be constructed and operate in the South Central Coast Air Basin under the jurisdiction of the Ventura County Air Quality Control District and the

South Coast Air Quality Management Districts. Neither of these districts meets Federal air quality standards for certain air contaminants.

Construction air emissions associated with the Cabrillo Port Project would be short-term. The Applicant would be subject to a conformity analysis and would need to implement emission-control measures developed in consultation with local air quality management districts (AQMD) to reduce impacts associated with construction emissions to less than significant levels. In addition, the Applicant would implement a Fugitive Dust Control Plan to minimize dust generated during construction activities.

During operations, the FSRU would generate emissions that would exceed regulatory levels and so would require a USEPA permit and offsets. Offsets would be negotiated with USEPA Region IX. The Applicant would use new LNG carriers and crew and supply vessels to ensure that marine vessel emissions are minimized.

4.6 BIOLOGICAL RESOURCES

Marine

Marine ecosystems located along the proposed Project are typical of coastal Southern California and include sandy beaches, rocky shores, and sub-tidal and pelagic communities. Invertebrate ecosystems include benthic (bottom-dwelling) animals, infauna occurring in soft substrata, and epifaunal communities on both hard and soft substrata. No special status invertebrate species are found within identified communities. Impacts on benthic communities include crushing or smothering of individuals during pipe-laying activities. These benthic communities are expected to re-colonize the Project area within one year of construction. The pipeline on the seafloor will provide relief habitat. Thus, no mitigation measures are identified.

Marine fish communities common to the Project vicinity vary according to water depth, dominant strata, and habitat and include groundfish species and pelagics. Four special status marine fish species are identified as potentially occurring within the area—steelhead, bocaccio, Pacific rockfish, and California grunion. Several coastal pelagic species are covered by fishery management plans directed by the Pacific Fishery Management Council, as are the major groundfish species. These species would temporarily avoid the Project area during construction, but fish are expected to return to the area immediately after termination of construction, and impacts would be short-term. The pipeline would provide low-relief habitat for foraging and cover, providing a long-term beneficial impact. Mitigation measures would include seasonal restrictions as requested by the California Department of Fish and Game (CDFG) and noise-reduction methods for construction and support vessels during construction.

Thirty-four marine mammals, including whales, dolphins, porpoises, and seals and sea lions may occur in the Project area. Six of these (cetaceans) are listed as endangered, while two pinnipeds and the southern sea otter are listed as threatened. Impacts to marine mammals would be short- and long-term. Potential impacts include collisions with the pipe-laying vessel or support vessels during installation of the subsea pipeline

(short-term impact) and entanglement with cables associated with anchoring the FSRU (long-term impact) and with pipe-laying activities (short-term impact). Additionally, noise associated with construction activities could potentially result in area avoidance or other migration, feeding, or behavioral changes resulting in short-term impacts during construction activities. Several mitigation measures have been proposed to eliminate or minimize these impacts to less than significant, including seasonal restrictions of construction to avoid migration seasons, speed limits for construction vessels, marine biological monitors onboard vessels during construction activities, and noise-reduction methods for construction vessels.

Seabirds common to the area include shorebirds and various marsh species. Several species of shorebirds and seabirds are federally listed or State-listed and include the California brown pelican, marbled murrelet, and Xantus' murrelet. Potential long-term impacts on bird species in the Project area include potential collisions with the FSRU due to nighttime lighting. Short-term impacts include exposure to petroleum products on the water surface in the event of an accidental spill or release. Mitigation measures include development and adherence to an SPCC plan and light-shielding methods for lights proposed for the FSRU. These measures have been proposed to minimize or reduce any potential impacts on marine birds.

Four species of sea turtles that are federally listed also occur within the Project vicinity. Potential impacts are similar to those for marine mammals, including short-term impacts such as collision with support vessels during construction and long-term impacts, including entanglement with gear used for anchoring or during construction. Mitigation measures proposed would be similar to those for marine mammals, including speed limits and marine biological monitors onboard construction vessels.

Terrestrial

The proposed Project is located within three biogeographical areas: the Coastal Zone, the Oxnard Plain, and the Santa Clarita Valley. The Coastal Zone supports habitat that consists of sandy beaches, wetlands, salt marsh, backdunes, and developed land. The pipeline routes traverse agricultural and urban developed lands, coastal sage scrub, and coast live oak woodland within the Oxnard Plain. The Line 225 Pipeline Loop pipeline routes traverse urban residential and industrial development, native coastal sage scrub, and Southern willow-cottonwood riparian habitat in the Santa Clarita Valley.

Cutting, clearing, and/or removing existing vegetation within the pipeline ROW would cause the initial impact on species and their habitat. Impacts on the sage scrub, riparian habitat at the river crossings, and oak woodlands would result in long-term impacts. In addition, clearing the ROW would result in the displacement of wildlife species from areas on or adjacent to the ROW. These impacts would not be considered significant because the ROW would be restored to pre-construction conditions.

Indirect impacts could occur from a potential release of drilling muds during HDD to install the pipeline beneath Ormond Beach or wetlands and waters of the United States,

but a contingency plan would be developed to anticipate and quickly respond to limit the damage from a potential release. The alignment of the Line 225 Pipeline Loop would cross the South Fork Santa Clara River at Magic Mountain Parkway, the Santa Clara River at McBeal Parkway, and the San Francisquito Creek at McBean Parkway, all of which are considered Significant Ecological Areas (SEAs), i.e., ecologically fragile lands that are valuable as habitat for plant and animal communities; however, since these SEAs would be crossed using existing bridges, the effects would be reduced.

The South Fork Santa Clara River would be crossed via a closed girder bridge, while the Santa Clara River and San Francisquito Creek would be crossed via open girder bridges. Other crossings, such as at several concrete-lined flood control channels may require using existing road bridges or HDD. Minor wet crossings and dry washes would be crossed via open cut trenching.

Impacts on biological resources within the Coastal Zone and Oxnard Plain would not be significant. The proposed Project would not contribute to any further loss of biological resources because the majority of the ROW occurs within an existing roadway or road shoulder, and the pipeline would be installed beneath Ormond Beach using HDD.

Mitigation measures to avoid or reduce impacts have been developed but the Project could still result in a net loss of biological resources and habitat that could support sensitive species. The California Natural Diversity Database identifies several special status species occurring within the three bio-geographical areas. The USFWS and the National Oceanic and Atmospheric Administration (NOAA) Fisheries are the primary agencies responsible for compliance with Federal wildlife laws, including the Endangered Species Act (ESA).

The CDFG is responsible for protecting and perpetuating State fish and wildlife resources. The Applicant would be required to address the proposed Project action in compliance with Section 7(c) of the ESA of 1973, as amended. Section 7 of the ESA assures that, through consultation with USFWS and NOAA Fisheries, Federal actions do not jeopardize the continued existence of any threatened, endangered, or proposed species, or result in the destruction or adverse modification of critical habitat. Impacts to Federal- and State-listed species are unknown at this time. Once the ROW is defined, and before construction begins, species surveys need to be conducted to identify sensitive species within the ROW. Species-specific mitigation measures would be developed prior to the start of Project activities to avoid, reduce, or minimize impacts on their habitat during construction and operation.

4.7 CULTURAL RESOURCES

FSRU installation, offshore pipeline construction, and ship anchoring could disturb any historic or archaeological resources located on the seafloor or within seafloor sediments. An offshore survey identified fourteen sites within 100 meters of the pipeline route that could contain objects of human origin. The Project includes a ground truthing survey to further identify the type and location of these objects. Based the survey results, the Project will avoid by 328 feet (100 m) all objects of human origin that could

have historic significance. There is no evidence of Native American watercraft in the offshore environment in the Project area.

The onshore and offshore aspects of the Project could impact undocumented resources that are of value to Native American culture and heritage, particularly descendants of the Ventura Chumash. Mitigation measures for this potential impact include avoidance of cultural sites; Native American monitoring of Project-related activities; implementation of procedures specified in the CEQA such as the Health and Safety Code and the Public Resources Code if human remains are discovered in the Project area; and relocating and replanting grasses of Native American concern.

Ground-disturbing activities, including trench excavation, pre-construction ditching, grading, horizontal boring, and HDD also could impact previously unknown onshore archaeological resources that have not yet been documented. Indirect impacts such as increased accessibility of cultural resource sites to artifact collectors or vandals and introduction of visual elements that may compromise the integrity of an important setting or historic or traditional values could also occur.

All sites within the Project area would be identified before issuance of Project permits so that avoidance may be achieved by Project redesign where feasible. A pedestrian survey, including participation by a Native American representative, would be conducted by a qualified archaeologist prior to all ground-disturbing construction activities along portions of the alignments that have not been previously surveyed in order to complete the inventory of archaeological sites, determine significance, and develop and implement data recovery plans for significant sites where avoidance is infeasible.

4.8 ENERGY AND MINERAL RESOURCES

The proposed Project does not cross any known aggregate or other mineral resource locations, although a number of oil and gas leases are located in the vicinity of the proposed and alternate pipeline routes. Given that the pipeline routes are generally located in existing ROWs and that there is an existing moratorium on developing new oil and gas resources offshore in the Project area, any additional development of these resources (if the moratorium were lifted and/or litigation ceased) would likely implement directional drilling techniques. Thus, no significant impacts on mineral resources from the proposed Project were identified.

A temporary increase in demand on the local energy infrastructure would be associated with facility construction, leading to slightly increased demand for electricity, gasoline, and other fuels for construction equipment operation and to satisfy the domestic energy needs for a temporary construction work force and their families (estimated at 368 persons during an eight-month construction period for the onshore facilities).

California has implemented aggressive programs to conserve energy and encourage increased use of renewable energies, which is considered in the environmental baseline for this EIS/EIR.

4.9 GEOLOGIC HAZARDS

The proposed Project would be located in the Ventura and Santa Monica basins. Eight active or potentially active faults are located near the proposed Project area. Geologic hazards such as seismicity, i.e., active faults, earthquakes/ground shaking, and soil liquefaction, slope instability (landslides), subsidence, flash floods, and debris flows could threaten the integrity of the pipeline facilities onshore and offshore but would be taken into account in establishing the final design criteria.

The proposed Project pipeline routes would avoid known fault crossings, but this is a seismically active area and the pipeline routes likely cross several buried faults both onshore and offshore. The pipelines and aboveground facilities would be designed and constructed in accordance with Federal and State standards and guidelines to reduce the potential impacts on pipeline integrity from these hazards. The Applicant would complete final geotechnical studies of onshore areas where buried faults are suspected to accurately define the fault plane location, orientation, and direction of anticipated offset, which would be used to refine pipeline design parameters for these locations. The results of such studies would be used by Federal, State, and local agencies during their pre-construction engineering reviews and approvals.

Impacts from construction would include temporary changes in the natural topography that might increase the potential for erosion or differential compaction due to trenching and grading activities. Additionally, HDD used to bury the pipelines would temporarily disturb the subsurface and could provide a preferential path for drilling fluids. To minimize these impacts, the pipeline route has been selected to avoid areas of potential erosion and steep slopes. Additionally, after construction, the Applicant would restore the natural elevation and drainage conditions as closely as possible to pre-existing conditions, following industry standard practices for backfilling, compacting, regrading, and revegetation.

Onshore pipeline installation could permanently disturb or destroy paleontological resources. To prevent this, a qualified paleontologist may be required to monitor excavations in suspected areas and would be responsible for properly excavating, collecting, and cataloging any paleontological specimens discovered.

4.10 HAZARDOUS MATERIALS

The types and quantities of hazardous materials that would be used during construction, inspection, testing, maintenance, and operations are typical for similar energy-related facilities. As part of developing the required operations manuals, the Applicant and SoCalGas would develop procedures for the storage, management, control, and spill-response actions for all of these hazardous materials and emergency plans (see Section 4.2, “Public Safety”).

Some locations along the proposed pipeline routes are known or suspected to have soil or groundwater contamination from previous or existing activities unrelated to the

proposed Project. Construction crews could encounter contaminated soil or water during clearing, trenching, or drilling operations.

As required, the Applicant and SoCalGas would develop construction procedures to ensure that their employees and contractor personnel recognize and respond appropriately and safely to areas of known or suspected contamination; coordinate with local agencies to ensure that all known or suspected contaminated sites are identified and marked before beginning construction activities; and ensure that any additional protective measures are in place to prevent accidentally exposing members of the public to these materials.

Soils and water bodies could be exposed to potential contamination from spills or leaks of fuels, lubricants, and coolant from construction equipment. The Applicant would mitigate these potential impacts by implementing a Spill Prevention, Control, and Countermeasures Plan approved by public agencies.

4.11 LAND USE

The onshore pipelines would be installed mostly in existing pipeline ROWs in roadways, on road shoulders, or in easements. The proposed Center Road pipeline route would traverse parts of the City of Oxnard and unincorporated areas of Ventura County. In Oxnard, the proposed Project would traverse primarily agricultural fields, green belts, and open space with some residential and commercial land uses. In Santa Clarita, the proposed pipeline route would traverse open space and residential, industrial, and commercial areas.

Surface facilities would be constructed on or immediately adjacent to the Reliant Energy Ormond Beach Generating Station or SoCalGas property. During installation of the onshore pipeline, access to business and residences would be maintained, although traffic congestion may affect roadways along the route. However, these impacts would occur only during construction.

The Channel Islands National Marine Sanctuary (CINMS) is preparing an EIS that includes alternatives that would expand the boundaries of the sanctuary. Depending on the boundary concept selected, Cabrillo Port may or may not be within the sanctuary boundaries. The CINMS has explained that installation of the FSRU and pipeline would not automatically preclude the sanctuary from including the Project area in its new boundaries; however, if the FSRU location were within the boundaries under consideration, this would need to be considered by CINMS when making a final decision about the sanctuary boundaries.

From approximately Milepost (MP) 0.0 to MP 0.2, the proposed Project route is located within the Ormond Beach Coastal Zone Area. The Oxnard Coastal Land Use Plan governs land uses in this zone. The policy for the Ormond Beach area encourages industrial and recreational uses while protecting beaches and wetlands. Part of the area is designated specifically for energy.

The Project would require a Federal coastal consistency determination by the California Coastal Commission

4.12 NOISE

Noise would be generated during the offshore and onshore construction and the offshore operations of the Cabrillo Port. Existing offshore noise includes noise generated by commercial, recreational, and U.S. Navy vessel traffic. Noise generated onshore is location-specific, but includes ocean, bird, vehicle, agricultural, and industrially generated noise.

Offshore construction noise would be temporary and the Applicant has proposed to operate construction equipment on an as-needed basis and to use engine covers. Onshore construction noise also would be temporary and the Applicant has proposed to use equipment in good working order and with equipment covers, restrict hours of construction, and notify the public before starting construction at a new location. In addition, the Applicant would monitor noise levels, enclose equipment, use silencers on equipment, and provide noise barriers at the HDD drilling location.

During offshore operations, equipment on the FSRU would generate airborne noise, as would the vessel traffic to and from the FSRU. The noise analysis of the FSRU operation indicated that noise generated by the FSRU would be noticeable at 3.1 miles (5 km) from the FSRU and at 0.6 miles (1 km) would interfere with conversation. The Applicant has proposed to minimize the airborne noise generated on the FSRU by using silencers and shielding equipment. To minimize noise generated by vessel traffic, the Applicant has proposed to minimize the number of trips to and from the FSRU.

No known noise would be generated from onshore operations. Noise could be generated from repair and maintenance activities. The noise generated would be temporary and would be similar to the levels generated during construction.

4.13 RECREATION

Offshore recreation in the Project area includes boating, sportfishing, sailing, whale-watching, and surfing. The presence of the Project would alter the experience of recreational boaters who travel several miles offshore, including visitors on whale-watching trips and other visitors to the Channel Island National Park. Some boaters are accustomed to the large ships traveling nearby in the shipping lanes. However, because some recreational boaters would view the presence of the FSRU as a significant adverse visual impact to the seascape, there would be a long-term significant impact to the recreational resource.

Project activities could restrict recreational fishing because of the creation of a 1,640-foot (500-m) safety zone around the FSRU and LNG vessels. However, because the safety zone would be small with respect to the entire area available for sportfishing, these activities would not significantly reduce the regional sportfishing resource. Two-day advance notice of LNG carrier scheduled transit would be provided at local ports to reduce the potential impact.

The shore crossing would cross beneath Ormond Beach and therefore beach access would not be affected. The Project is within 3 miles (5 km) of three beaches or beach parks. Neither the Center Road nor the Line 225 pipelines would cross public parks, but several recreational facilities are located nearby. Mitigation measures include a construction-related parking and access plan to ensure that the Project would not restrict parking for the beach or parks.

4.14 SOCIOECONOMICS

Social and economic factors in the Project area are population, housing, employment, public services, onshore commercial activities, commercial fishing, tax revenues, and tourism. Construction of the Project would include typical mitigation measures associated with pipelines, including working with land and business owners to maintain access during construction and minimize disruption to traffic.

Trawl fishers from fishing grounds directly along the pipeline route would not be excluded, although gear interference may result in trawl fishermen preferentially fishing elsewhere to avoid the potential loss of gear. Burial of the pipeline using HDD near-shore in Catch Block No. 683 would eliminate long-term interference by the pipeline with commercial trawl fishing gear. Other types of fishers would be permanently restricted from the 1,640-foot (500-m) safety zone surrounding the FSRU. The safety zone is small compared to overall fishing grounds in this portion of Southern California. The overall impact on fishing from exclusion of fishing in the Project area, and thus increased pressure in other areas, would not be significant.

An estimated 368 persons, including workers and their families, would migrate to the area and would need housing for at least the eight-month onshore construction period. The housing stock, including hotel/motel rooms and tents, appears sufficient to accommodate the temporary influx of workers and their dependents during the construction phase, so there would be no significant effect on the local housing market. To avoid disrupting local businesses during construction of the onshore pipelines, particularly roadside produce stands, access to businesses would be maintained.

The Project is anticipated to have both direct and indirect socioeconomic impacts that would be beneficial to the regional economy.

4.15 TRANSPORTATION

The proposed routes for most of the onshore pipelines are in or near existing roadways or ROWs; however, parking lots, bike routes, and traffic lanes would be crossed. No airports would be affected by the proposed Project.

Mitigation measures to be implemented during construction of the offshore facilities would ensure that temporary impacts on the availability of parking near beach areas near any shore crossing would be less than significant. Given that construction would occur primarily in existing ROWs, impacts on the local transportation infrastructure would be minor, temporary impacts. Temporary impacts would be expected to include reductions in the availability of on-street parking, closures of some bike routes, delays

on transit and railway routes, traffic lane closures, and temporary increases in traffic levels on roadways and at intersections along or near the pipeline routes.

Before construction, the Applicant would develop a traffic control plan for review and approval by the lead agencies that would address actions and work scheduling to minimize disruption of all modes of transportation—pedestrian, bicycle, private motor vehicle, bus/transit, and rail—in the Project area. This plan would also identify actions to be taken to limit and repair potential damage to existing roadways from heavy construction equipment and to limit the amount of mud, grit, and sand carried on dirty equipment or construction vehicle tires from the Project areas onto public roadways, railway tracks, or bike routes.

Longer term impacts to the transportation infrastructure would be associated with the operation and inspection of the Project facilities and would include an increase in local parking needs and increased local traffic of approximately 60 vehicle trips per week to accommodate workers catching weekly crew boats. The Applicant has proposed to lease 60 parking spaces at a nearby location to provide parking for FSRU crews. Additional vehicle trips and short-term parking needed for conducting regular inspections of the onshore pipelines would be negligible.

4.16 WATER QUALITY AND SEDIMENTS

The FSRU and offshore pipeline lie within the Southern California Bight. The sediment and water quality of the Southern California Bight has been extensively studied. Water quality parameters vary according to location and depth. The proposed Project route in Oxnard would cross 19 surface water bodies and in Santa Clarita would cross eight surface water bodies.

Discharges from the FSRU would be regulated by a National Pollutant Discharge Elimination System (NPDES) permit. Compliance with the permit would ensure discharges are within established water quality thresholds. Other impacts on marine water quality would include degradation of water quality due to accidental discharge of petroleum, brine, hydrostatic test water, drilling fluids, graywater, or untreated sewage from construction and installation activities or normal operations. Impacts would generally be temporary and highly localized.

The proposed pipeline alignments would cross several creeks, agricultural drainages, and flood control channels. Impacts associated with crossing these surface waters may include erosion, sedimentation, and release of drilling fluids from HDD activities. Mitigation measures to reduce associated impacts would include an erosion control plan outlining best management practices for control of erosion and sedimentation, especially at stream crossings; monitoring of HDD activities at stream crossings; a release of drilling muds contingency plan; and efforts to use oxygen scavengers and biocides in the hydrostatic test water that are not detrimental to the environment.

4.17 ENVIRONMENTAL JUSTICE

In comparison with Hispanic or Latino populations in Ventura County and the State, a larger percentage of Hispanic or Latinos reside along the proposed Center Road Pipeline and alternate routes. Because the Hispanic or Latino population along the route is more than 50 percent of the population and exceeds the percentage of the Hispanic and Latino population in Ventura County, the ethnic composition of the population located along the Center Road Pipeline was investigated using census tract and census block information. In addition, the number of people along the Center Road pipeline route that are below the poverty level exceeds the number in Ventura County. Along the Line 225 Pipeline Loop or its alternatives, the census data indicate that no minority or low-income community is present that warrants a more detailed block-level analysis.

Most of the impacts along the Center Road Pipeline route would be short-term and less than significant, with the exception of one public safety impact that would occur at about MP 4.1. At this location there are two mobile home parks that, due to the type of construction, could be subject to a significant safety impact in the case of an accident.

Because the housing is less robust, if a pipeline rupture occurs, the residents at these mobile home parks are close enough to the pipeline route that a gas release and the resulting fire would likely spread more rapidly or affect a greater area; this would result in a disproportionately adverse effect. Thus, the Project could result in a significant environmental justice impact at this location. The probability of an accident occurring is low, but members of the public could be harmed if an accident were to occur. Whether or not anyone would actually be injured would depend on many factors, e.g., the nature of the accident, the number of people in the area at the time, the response time by emergency personnel such as firefighters, and other factors. However, to be conservative i.e., more protective of the environment, the Agencies have identified this as a significant impact.

Mitigation for this potential safety impact includes adding additional shutoff valves along the pipeline in this location and constructing the pipeline to meet Class 3 standards. The recommended feasible mitigation measures have been designed to reduce both the frequency and the consequences of any potential accidents. In addition, the Agencies have recommended that the Applicant provide all Project information in Spanish; that a translator be present at all meetings; and that smoke detector and escape planning materials be provided to all residents in HCAs, including residents of mobile homes.

5.0 CONCLUSION

If the impacts of the Cabrillo Port Project are considered additively with the impacts of other past, present, or reasonably foreseeable future projects, there is some potential cumulative effect on resources such as marine and terrestrial biological resources, marine traffic, noise, land use, and environmental justice, among others. Several adverse effects are unavoidable. Mitigation measures have been developed or recommended to minimize, avoid, or compensate for adverse impacts on each resource

(other than some aesthetic resources, terrestrial biological resources, and recreational resources for which no mitigation is feasible). Thus, the proposed Project would not contribute significantly to a cumulative adverse effect on the region's environment.

Growth-Inducing Impacts

The supply of additional natural gas to Southern California would not likely induce growth in the region, but would serve both the existing and anticipated future demand for natural gas. Cabrillo Port would not be the sole supplier of natural gas to the region. Regional development or infrastructure growth would occur with or without this Project.

Environmentally Preferred Project

The Agencies have determined that the proposed Project is the environmentally preferred project.

Major Conclusions

The conclusions presented are those of the environmental staff of the USCG, MARAD, and the CSLC.

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
PUBLIC SAFETY [PS] (Section 4.2)			
FSRU			
PS-1: *Potential Release of LNG due to Operational Incident or Natural Phenomena* An operational incident due to human error, upsets, or equipment failures or as a result of natural phenomena (tsunami, high winds, etc.) could cause a release of LNG from process or loading equipment.	Class II	**AMM PS-1a. Applicant Engineering and Project Execution Process.** Applicant would conduct: front end engineering design, offshore site survey, safety cases (HAZOPs, risk analyses), detailed design, basin model tests, third-party verification, quality and safety audits, pre-startup reviews. **AMM PS-1b. Obtain Class Certification and a Safety Management Certificate for the FSRU.** The Applicant would obtain class certification and a safety management certificate, although not required under international agreements (i.e., through the IMO) for the FSRU. **AMM PS-1c. Periodic Inspections and Surveys by Classification Societies.** The Applicant would have periodic inspections of the FSRU conducted by classification societies, including annual inspections and a full survey after five years of facility operation and every five years thereafter. **AMM PS-1d. Designate Safety/Exclusion Zone and Area to be Avoided.** The Applicant would monitor a 1,640-foot (500 m) radius safety zone to be designated by the USCG around the FSRU, where public maritime traffic would be excluded, and a 2 NM (2.3 miles or 3.7 km) Area to be Avoided. **MM PS-1e. Include LNG cargo tank fire survivability after loss of insulation in engineering design analyses.** Safety engineering, HAZIDs, HAZOPs, and QRA supporting the detailed engineering design shall include cases where cargo tank insulation is presumed to fail in the event of a fire. **MM PS-1f. Include structural component exposure to temperature extremes in engineering design analyses.** Safety engineering, HAZIDs, HAZOPs, and QRA supporting the detailed engineering design shall include cases where decking, hulls, and structural members are exposed to both cryogenic temperatures	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
		from spilled LNG and exposure to extreme heat from a fire. **MM PS-1g. Conduct Post-Operational HAZOPs.** HAZOPs shall be conducted that address all LNG operations before beginning operation and after one year of operation, and every two years thereafter. **MM PS-1h. Use Standby Tug/Supply Vessel and Vessel Thrusters to Maintain FSRU or Carrier on Station.** Emergency operations procedures shall incorporate the use of the tug and thrusters to maintain the FSRU position in the event of a failure of the mooring system or to maintain the LNG carrier position in the event of a loss of propulsion or control. **Also applies here (see applicable Impact):** **AMM MT-6a. Patrol Safety Zone and Monitor Traffic.**	
FSRU or LNG Carrier			
PS-2: *Potential Release of LNG due to High Energy Marine Collision or Intentional Attack* A high-energy collision with the FSRU or an LNG carrier and another vessel or an intentional attack could cause a rupture of the Moss tanks holding LNG, leading to a release of an unignited flammable vapor cloud that could extend beyond the 1,640-foot (500 m) radius exclusion zone around the FSRU, or could impact members of the boating public in the vicinity of an LNG carrier.	Class I	**AMM PS-2a. Equip FSRU and LNG Carriers with AIS, Radar, and Marine VHF Radiotelephone.** The Applicant would equip the LNG carriers and the FSRU with an AIS and with real-time radar and marine VHF radiotelephone capabilities. **MM PS-2b. Homeland Security/USCG/Port Authority terrorist interdiction actions.** These potential actions are not discussed specifically in this report. However, actions to prevent the takeover of a vessel by crew members or third parties shall be implemented to prevent an intentional high-speed collision with a large vessel. **MM PS-2c. Active Response to Approaching Vessels or Aircraft.** At a predetermined distance (described in shipboard plans), consideration shall be given to using the standby tug to intercept approaching vessels, and action shall be taken using the FSRU thrusters or the tug to rotate the FSRU to reduce the potential for impact with the approaching vessel.	Significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
		MM PS-2d. Provide Aids to Aircraft Navigation. The Applicant shall ensure that all required information is provided to the Federal Aviation Administration (FAA) for warnings on aviation sectional maps. **Also applies here (see applicable Impact):** **AMM MT-6a. Patrol Safety Zone and Monitor Traffic.** **AMM PS-1a. Applicant Engineering and Project Execution Process.** **AMM PS-1b. Obtain Class Certification and a Safety Management Certificate for the FSRU.** **AMM PS-1c. Periodic Inspections and Surveys by Classification Societies.** **AMM PS-1d. Designate Safety/Exclusion Zone and Area to be Avoided.** **MM PS-1e. Include LNG cargo tank fire survivability.** **MM PS-1f. Include structural component exposure to temperature extremes in engineering design analyses.** **MM PS-1g. Conduct Post-Operational. HAZOPs/** **MM PS-1h. Use Standby Tug/Supply Vessel and Vessel Thrusters.** **MM MT-6b. Radar to Detect Approaching Vessels.** **MM MT-6d. Lights and Sound Signals.** **MM MT 6e. Information for Navigational Charts.** **MM MT 6f. Securite Broadcasts.**	
Offshore Pipelines			
PS-3: *Potential Release of Unodorized Natural Gas due to Accidental Damage of Subsea Pipelines* There is a potential for fishing gear to become hung up on the pipeline and potentially damage one or both of the subsea pipelines. Similar damage may occur due to a seismic event or	Class I	**AMM PS-3a. Concrete-Coatings Expected to add Mass and Stability in Shallower Waters.** The Applicant would ensure that pipelines laid on the seafloor in shallower waters would be concrete-coated. **AMM PS-3b. Seismic Area Imposes more Stringent Design Requirements.** The offshore pipelines for this Project would be designed and constructed to ensure that pipeline integrity is	Significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
subsea landslide.		maintained during severe seismic events.	
		AMM PS-3c. Comply with Design, Maintenance, inspection, and testing requirements. The Applicant would o design, install, operate, maintain, and inspect pipelines to meet regulatory requirements **MM PS-3d. Areas Subject to Accelerated Corrosion Cathodic Protection System.** The Applicant shall identify any areas where the pipeline may be subject to accelerated corrosion. Cathodic protection systems shall be installed and made fully operational as soon as possible during pipeline construction. **MM PS-3e. Emergency Communication/ Warnings.** The Applicant's emergency plans and procedures shall require immediate notification of vessels in any offshore area, including hailing and Securite broadcasts, and immediate notification of local police and fire services whenever the monitoring system indicates that there might be a problem with subsea pipeline integrity. **Also applies here (see applicable Impact):** **MM MT-6d. Lights and Sound Signal.** **MM MT 6e. Information for Navigational Charts.** **MM MT 6f. Securite Broadcasts.**	
Shore Crossing			
PS-4: *Potential Release of Unodorized Natural Gas due to Accidental Damage of Pipelines* The potential exists for accidental or intentional damage to the buried or aboveground pipelines or valves carrying unodorized natural gas. Similar damage may occur due to a seismic event. This would result in the release of an unodorized natural gas cloud at concentrations that are likely to be in the flammable range.	Class I	**AMM PS-4a. Pipeline and Facility Monitoring and Inspections.** The Applicant has committed to design, install, operate, maintain, and inspect pipelines and other Project facilities to meet regulatory requirements. **MM PS-4b. Define Shore Crossing as Pipeline HCA.** Any onshore area above the mean low tide mark where the pipeline is carrying unodorized natural gas shall be defined as an HCA. **MM PS-4c. Automatic Monitoring for Flammable Gas.** An automatic monitoring system (sniffer) shall be designed and installed in shore crossing HCAs where the pipeline is carrying unodorized natural gas.	Significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
		MM PS-4d. Emergency Communication and Warnings. The Applicant's emergency plans and procedures shall require immediate notification of vessels in any nearshore area, immediate notification of local police and fire services, and visual and audible alarms to alert members of the public in the area.	
PS-5: *Potential Odorant Release and Fire* The potential exists for accidental or intentional damage to the odorant tank storage or injection components that would release highly flammable and foul-smelling odorant as a liquid.	Class II	**AMM PS-5a. Construction, Maintenance, and Operation in accordance with regulatory requirements.** SoCalGas would design, construct, maintain, and operate proposed Project facilities in accordance with applicable codes, standards, and regulatory requirements. **MM PS-5b. Provide Automatic Gas Detection and Fire Suppression Systems at the Storage Tank Location.** Automatic monitoring for flammable gas shall be installed in the tank area to provide early warning of any leaks. **MM PS-5c. Evaluate adding odorant to the LNG prior to shipping; Implement when feasible.** Industry efforts to identify an economical and technically feasible odorant that could be added to LNG are currently ongoing. **Also applies here (see applicable Impact):** **AMM HAZ 2a. Manage Used Oil in Accordance with EPA and State Requirements.** . **AMM HAZ-5a. Spill Prevention, Countermeasures, and Control Plan.**	Less than significant
Onshore Pipelines			
PS-6: *Potential Release of Natural Gas due to Operational Incident or Natural Phenomena* An operational incident due to human error or equipment failures, or as a result of natural phenomena (earthquakes, landslides, etc.) could cause a release of natural gas from the high pressure natural gas pipelines. The greatest hazard to public safety from natural gas pipelines is from a component or pipeline failure that releases natural gas that is	Class I	**AMM PS-6a. Applicant would construct all pipelines to meet Class 3 Design Criteria.** The Applicant would construct all pipeline segments to meet the minimum design criteria for a Class 3 location. **MM PS-6b. Pipeline Integrity Management Program.** The Applicant shall develop and implement a pipeline integrity management program, including confirming all potential HCAs and ensuring that the public education program is fully implemented prior to commencing pipeline operations. **MM PS-6c. Include Automatic Shut Down Valves.** The	Significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
subsequently ignited.		Applicant shall include automatic shutdown valves (ASDVs) with appropriate blow-down time on the upstream side of the pipeline and check valves on the downstream side in HCAs. This provides additional means for isolating segments of the pipeline should a rupture occur. **Also applies here (see applicable Impact):** **AMM PS-3c. Comply with Design, Maintenance, Inspection, and Testing Requirements.** **MM PS-3d. Areas Subject to Accelerated Corrosion, Cathodic Protection System**.	
PS-7: *Potential for Increased Consequences of Natural Gas Release and Fire in Areas with Less Robust Housing Construction* In the event of an accident, there is a greater likelihood of injury, fatality, and property damage due to fire and explosion in Areas with Less Robust Housing Construction.	Class I	**MM PS-7a. Define HCA for any PIR that includes one or more mobile homes. Assist residents to improve emergency planning.** Areas where the PIR includes one or more normally occupied mobile homes or travel trailers used as temporary or semi-permanent housing shall be defined as an HCA. Mitigation measures (e.g., smoke detectors and outreach for notification and escape planning) shall be provided to all residents of that housing. **MM PS-7b. Define an HCA for areas where the PIR includes part or all of a manufactured-home residential community.** Provide mitigation measures (e.g., smoke detectors and outreach for notification and escape planning) to all residents of that community. **MM PS-7c. Implement Public Education/ Awareness Program.** The Applicant shall develop and implement a public education and awareness program that complies with American Petroleum Institute's (API) recommended practice (RP) 1162, "Public Awareness Programs for Pipeline Operators." **Also applies here (see applicable Impact):** **AMM PS-6a. Applicant Would Construct all Pipelines to Meet Class 3 Design Criteria**.	Significant
PS-8: *Potential for Increased Injuries or Fatalities in areas with Outdoor Activity* In the event of an accident, there is an increased potential for injury or fatality near	Class I	**MM PS-8a. Define HCA.** An HCA shall be defined in this area using the mobile home park property boundaries and any garden areas as the edge of an outdoor area that meets HCA criteria.	Significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
Center Road Pipeline Milepost (MP) 4.1 due to Community Activities Outdoors.		**Also applies here (see applicable Impact):** **AMM PS-6a. Applicant Would Construct all Pipelines to Meet Class 3 Design Criteria.**	
MARINE TRAFFIC (Section 4.3)			
Offshore Construction			
MT-1: *Temporary Disruption of Maritime Traffic and Increased Collision Risks During Offshore Construction* Marine activities associated with site preparation, transportation, and installation of the mooring system, FSRU, or subsea pipeline could temporarily disrupt maritime traffic and increase the risk of vessel collision.	Class II	**AMM MT-1a. Notice to Mariners.** A Notice to Mariners would be submitted to the USCG in sufficient time to ensure proper dissemination to Mariners before construction begins. **AMM MT-1b. Safety Boat Warnings.** Station a safety boat 3 to 5 NM from the pipe-laying barge to provide warnings. **AMM MT-1c. Automatic Identification System.** The pipe-laying barge and associated vessels would be equipped with an Automatic Identification System (AIS). **MM MT-1d. Notices to Mariners.** Notices to Mariners shall contain planned positions of vessels for the entire construction period, planned traffic lane closures, speed restrictions in the vicinity of vessels, and alternative routes and radio channels that Project vessels shall monitor and work. **MM MT-1e. Securite broadcasts.** Make Securite broadcasts every half hour. **MM MT-1f. Light and sound signals.** The pipe-laying barge shall have special light and sound signals indicating the presence of a vessel with restricted maneuverability. **MM MT-1g. Safety Boat.** Ensure a safety boat is present at all times	Less than significant
MT-2: *Temporary Increase in Maritime Traffic Congestion at Local Ports During Offshore Construction* Marine activities associated with site preparation; transportation; installation of the mooring system, FSRU, and subsea pipeline; and offshore horizontal directional drilling (HDD) activities could cause temporary local port	Class III	**AMM MT-2a. Use ports other than Port Hueneme.** The Applicant has agreed that, during construction, Applicant vessels with equipment, supplies, fuel, and construction materials would travel from ports other than Port Hueneme.	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
congestion through lack of pier space, increased channel traffic, or increased demand for pilot services.			
MT-3: *Temporary Interference with Operations in the Point Mugu Sea Range or the SOCAL Range Complex During Offshore Construction* Marine activities associated with site preparation; transportation; and installation of the mooring system, FSRU, or subsea pipeline temporarily could burden maritime traffic tracking systems or make clearing of some warning areas impossible, thus temporarily disrupting operations in the Point Mugu Sea Range and the SOCAL Range Complex.	Class II	**MM MT-3a. Avoid Point Mugu Sea Range.** Except when necessary, use of the waters in the Point Mugu Sea Range shall be avoided during construction. **MM MT-3b. Daily Safety Briefs.** Daily safety briefs aboard all Project vessels shall include instructions to avoid use of Point Mugu Sea Range waters when possible. **MM MT-3c. Daily Coordination with the U.S. Navy.** The Applicant shall coordinate daily (or at an interval that the U.S. Navy deems sufficient) with the U.S. Navy to ensure that no conflicts exist between Navy operations and Project construction. **MM MT-3d. Monitor U.S. Navy Securite Broadcasts.** Project vessels shall monitor all U.S. Navy "Securite" warning broadcasts on VHF-FM.	Less than significant
MT-4: *Temporary Disruption in Maritime Traffic and Increased Risk of Vessel Collisions Due to Activities at the HDD Exit Point and Pipe Laying* Marine activities associated with the offshore HDD exit point and connection to the offshore pipeline could disrupt maritime traffic temporarily, and temporarily increase the risk of vessel collision or fishing gear entanglement.	Class II	**MM MT-4a. Guard Boats.** Use guard boats on either side of construction vessels **MM MT-4b. Post Construction Schedule Signs.** Signs shall be posted at local marinas and ports to inform the public of the nearshore construction schedule at least one month prior to the first day of construction. **MM MT-1a. Safety Boat Warnings**.	Less than significant
MT-5: *Long-Term Interference with Operations in the Point Mugu Sea Range and the SOCAL Range Complex* Marine activities associated with operations could burden maritime traffic tracking systems or could make clearing of some warning areas impossible, thus disrupting operations in the Point Mugu Sea Range or the SOCAL Range Complex over the long-term.	Class II	**MM MT-5a. Follow U.S. Navy Securite Broadcasts**. U.S. Navy Securite broadcasts shall be heeded. **MM MT-5b. LNG Carrier Schedules.** Provide LNG Carrier schedules in advance to the Navy and Masters to coordinate their transits with the Navy. **MM MT-5c Coordinate with the U.S. Navy.** The Applicant shall coordinate with the Navy on the timing of the LNG shipments and with USN range scheduling authorities to ensure that they do not conflict with major exercises.	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
MT-6: *Long-Term Disruption in Maritime Traffic and Increased Risk of Vessel Collisions Due to FSRU Location* The FSRU mooring location would be situated close to the Southbound Coastwise Traffic Lane, with relatively high levels of maritime traffic and vessels entering/leaving Port Hueneme; thus, maritime traffic could be disrupted by Project operations and the risk of vessel collision would be increased for the long term.	Class II	**AMM MT-6a. Patrol Safety Zone.** The tug/ supply vessel on standby duty would patrol the DWP's designated safety zone, except during docking and undocking operations. **MM MT-6b. Live Radar and Visual Watch.** Live radar and visual watch shall be used to detect and identify approaching vessels and note approaching aircraft at all times. **MM MT-6c. Facility Operations Manual**. The Applicant shall formalize procedures in the facility operations manual. **MM MT-6d. Lights and Sound Signals.** The FSRU shall be equipped with sound signals and lit in a fashion to uniquely differentiate it from vessels under way. **MM MT-6e. Information for Navigational Charts.** The Applicant shall ensure that all required information is provided to the USCG and other agencies, as necessary, to place the FSRU location, safety zone information, and subsea pipeline locations and warnings on navigational charts.	Less than significant
		MM MT-6f. Securite Broadcasts. Securite broadcasts on VHF-FM shall be made prior to an LNG carrier mooring or unmooring.	
MT-7: *Long-Term Disruption of Local Maritime Traffic and Increased Risk of Vessel Collisions* LNG carriers, tugs, and attending vessels transiting to and from anchorage or port, or their loitering under way near the FSRU, could increase or disrupt maritime traffic and increase the risk of vessel collision for the long term.	Class II	**AMM MT-7a. Provisions for Delays.** The Applicant has stated that no Project vessels (including LNG carriers) would use anchorages. **MM MT-7b. Procedures for Delays.** Provide procedures for delays in the facility operations manual. **MM MT-7c. Coordination with Ports.** There shall be coordination between the Applicant's designee at the FSRU and the USCG Captain of the Ports of Los Angeles and Long Beach to identify appropriate "emergency anchorage." **MM MT-7d. Maximum Number of LNG Carriers.** Use a maximum number of one LNG carrier at the FSRU.	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
AESTHETICS (Section 4.4)			
Offshore Construction			
AES-1: *Change in Nighttime Views Caused by Offshore Pipeline Construction* Night lighting during construction could be visible from the shore and to residents living in the foothills and higher elevation areas in Malibu, thereby altering the nighttime viewshed.	Class II	**Applies here (see applicable Impact):** **MM Bio-Mar-13a. Construction/Operations Lighting Control.**	Less than significant
Onshore Construction			
AES-2: *The FSRU Would Alter Ocean Views from Onshore and Channel Islands Viewpoints* The addition of the FSRU in an unobstructed viewshed could alter views from beach areas, residences at sea level, and residences at higher elevations.	Class III	None.	Less than significant
AES-3: *The FSRU May Alter the Anticipated Views for Recreational Boaters* The FSRU would change the visual character of the ocean view for recreational boaters	Class I	**No maximum feasible mitigation measures available to reduce significant impact.**	Significant
AES-4: *Long-Term Change in Nighttime Views* Night lighting on FSRU could be visible to residents, thereby altering night vistas.	Class II	**Applies here (see applicable Impact):** **MM Bio-Mar-13a. Construction/Operations Lighting Control.**	Less than significant
AES-5: *Construction Equipment and Activities Would be Visible on City Image Corridors/Scenic Highways* Staging areas and equipment could be visible to residents and travelers on City Image Corridors/Scenic Highways during pipeline construction, thereby altering the viewshed.	Class II	**MM AES-5a. Berms and Fences.** The Applicant would minimize visual impacts from staging areas with berms and fences. **MM AES-5b. Light Positioning.** The Applicant would shield the light or position it at a 45-degree angle whenever possible to minimize glare and avoid creating a new source of light.	Less than significant
AES-6: *Construction Equipment and Activities Would be Visible on Local Roads* Staging areas and equipment could be visible to	Class II	**Also applies here (see applicable Impact):** **AMM AES-5a. Berms and Fences**. **MM AES-5b. Light Positioning.**	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
residents and travelers on roads, thereby altering the viewshed.			
AGRICULTURE AND SOILS (Section 4.5)			
AGR-1: *Loss of Agricultural Land* Construction activities could temporarily cause a loss of agricultural land, crops, or crop production. Operations could cause a loss of agricultural land, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be converted from agricultural land to non-agricultural land.	Class II	**AMM AGR-1a. Compensation.** Compensation to landowners for temporary use of agricultural land. **MM AGR-1b. Compensation for Temporary Loss of Agricultural Land.** Compensation shall be in the amount of the fair market value of the easements, losses or changes determined through an appraisal conducted by an independent appraiser, or a mutually agreed-upon settlement reached between the Applicant and the landowner.	Less than significant
AGR-2: *Topsoil Mixing and Compaction* Construction activities could result in topsoil and subsoil mixing and/or soil compaction, thereby reducing agricultural productivity.	Class II	**MM AGR-2a. Topsoil Salvage and Replacement**. For agricultural lands, the Applicant shall ensure that the upper 12 inches (0.3 m) of topsoil is salvaged and replaced wherever the pipeline is trenched. **MM AGR-2b. Landowner Compensation for Soil Productivity Losses.** The Applicant shall negotiate with landowners the measures landowners would like undertaken to ensure that soil productivity is maintained. **Also applies here (see applicable Impact):** **MM TerrBio-5a. Weed Management Plan.**	Less than significant
AGR-3: *Dust Deposition* Dust generated during construction could be deposited on adjacent agricultural lands with planted crops, temporarily reducing productivity.	Class II	**MM AGR-3a. Meet Water Quality Standards.** All water used for dust suppression shall meet all applicable water quality discharge standards and have obtained any applicable discharge approvals. **AMM Air-5a. Construction Fugitive Dust Plan.** The Applicant would develop and implement a Construction Fugitive Dust Control Plan.	Less than significant
AGR-4: Loss of tree rows could reduce agricultural productivity.	Class II	**MM TerrBio-3b. Tree Avoidance and Replacement.** The Applicant shall, to the extent possible, avoid, minimize, and compensate for impacts on trees by implementing measures.	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
AIR QUALITY (Section 4.6)			
Offshore			
AIR-1: *Emissions of Regulated Pollutants Generated During Offshore Construction* Vessel or equipment emissions used during the transportation or installation of the mooring system, FSRU, and offshore pipeline could contribute to existing violations of O_3 and particulate standards or could cause temporary reductions in ambient air quality.	Class II	**AMM AIR-1a. Using Low Emission-Emitting Equipment**. The Applicant would use construction equipment with the cleanest (lowest emitting) available equipment and clean, low-sulfur diesel. **MM AIR-1b. Conformity Analysis.** The Applicant shall comply with Ventura and Los Angeles Counties' prescription for offshore construction emissions reduction as set forth in the conformity analysis.	Less than significant
AIR-2: *Stationary Sources Emissions of Regulated Pollutants During Offshore Operations* Regulated pollutants (including criteria and hazardous) could be emitted above regulatory standards for a long-term during normal operations of the FSRU.	Class II	**AMM AIR-2a. NO_X, CO, and VOC Control**. Selective Catalytic Reduction (SCR) would be used to control NO_X emissions generated by the primary internal combustion engines, and catalytic oxidation would be used to control CO and ROC. **MM AIR-2b. NSR Offset Requirement.** The Applicant shall comply with offset requirements negotiated with the VCAPCD NSR rule.	Less than significant
AIR-3: *Emissions of Ammonia During Offshore Operations* Ammonia could be released for a long term in excess of reportable quantities or result in high ambient concentrations.	Class III	**AMM AIR-3a. Limit Ammonia Slip.** Ammonia slip in the SCR engine exhaust would be limited to 10 parts per million volume.	Less than significant
AIR-4: *Emissions from Mobile Sources During Offshore Operations* Emissions generated by mobile source emissions could generate long-term emissions that contribute to existing violations of O_3 and particulate standards.	Class III	**AMM AIR-4a. Use of New Vessels.** New supply and support vessels with USEPA-compliant engines would be used.	Less than significant
AIR-5: *Emissions Generated During Onshore Construction* Emissions from construction equipment associated with horizontal directional drilling (HDD) and onshore pipeline construction could	Class II	**AMM AIR-5a. Construction Fugitive Dust Plan**. The Applicant would develop and implement a Construction Fugitive Dust Control Plan. **Also applies here (see applicable Impact):**	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
reduce temporarily local ambient air quality and would contribute to existing violations of O_3 and PM_{10} standards.		**MM AIR-1b. Conformity Analysis**.	
AIR-6: *Emissions From an Accident During Onshore Operations* In the event of a pipeline accident, petroleum products temporarily could be exposed to the atmosphere, causing emissions of volatile organic compounds.	Class III	None.	Less than significant
AIR-7: *Emissions Generated During Offshore and Onshore Construction and Operations That Are Not Addressed Under Permits* Emissions generated by vessels or equipment used during the transportation, installation, or operation of all components of the proposed Project temporarily could exceed conformity threshold levels of nonattainment pollutants in Ventura or Los Angeles County.	Class II	**Applies here (see applicable Impact):** **MM AIR-1b. Conformity Analysis**.	Less than significant
MARINE BIOLOGY (Section 4.7)			
BioMar-1: *Temporary or Permanent Alteration or Disturbance of EFH or Sensitive Habitats* Construction activities could alter EFH or sensitive habitats (beach spawning areas, or hard bottom substrate) such that fish reproduction could be reduced or that prey species could be eliminated.	Class II	**MM BioMar-1a. Monitoring.** If intertidal beach work occurs between February and September, a qualified biologist will monitor the beach within 30 m of the route during the two weeks prior to installation. If a spawning event occurs during the two weeks prior to construction activities, installation will be delayed until the grunion eggs have hatched (approximately two weeks). **MM BioMar-1b. Avoidance.** Although recent surveys of the Project site have not identified any hard bottom areas, any unexpected hard bottom habitats encountered during construction shall be avoided.	Less than significant
BioMar-2: *Disruption of Marine Biota Behavior* Construction and/or operational activities could disrupt marine biota behavior, resulting in cessation or reduction of feeding or reproduction, area avoidance, or changes in	Class III	None.	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
migration patterns.			
BioMar-3: *Temporary Avoidance of the Area Due to HDD Release of Drilling Muds* A release of drilling muds and bentonite into the subtidal environment during HDD could cause temporarily increased turbidity. Increases in turbidity at the offshore exit point could cause fish to avoid this area.	Class II	**Also applies here (see applicable Impact):** **MM WAT-5a: Prepare and Implement HDD Contingency Plan.** **MM WAT-5b. Strategic Location for Drilling Muds and Cuttings Pit.**	Less than significant
Impact BioMar-4: *Burial of Sessile Marine Biota* Construction activities associated with pipeline and mooring installation could temporarily disturb soft substrate sediments and could bury or crush sessile marine biota such as benthic invertebrates	Class III	None.	Less than significant
BioMar-5: *Mortality and Morbidity of Marine Biota from Spills* Oil or fuel spills during construction or operation, or LNG spills, could cause morbidity or mortality of marine biota, including fish, invertebrates, sea birds, sea turtles, and marine mammals through direct contact or ingestion of the material.	Class II	**MM BioMar-5a. Control Measures.** Control measures shall be instituted on the FSRU, including systems to prevent or limit releases, proper drainage, emergency shutdown systems and depressurizing systems, and spill containment systems to prevent the potential risk of an accidental release of any hazardous materials.	Less than significant
BioMar-6: *Discharge of Bilge Water, Graywater, and Deck Runoff* A discharge of bilge water, gray water, or deck runoff from the FSRU or from the LNG tankers could result in the release of contaminants into the marine environment. A release of contaminants could cause mortality or morbidity of fish and/or benthic communities.	Class II	**AMM BioMar-6a. Treatment of Discharge Water.** The Applicant would treat graywater and sewage in chemical or biological sanitary waste systems pursuant to NPDES requirements before discharge. Runoff from the deck would be treated using an oil and water separator. **Also applies here (see applicable Impact):** **AMM HAZ-2a. Manage Used Oil in Accordance with USEPA and State Requirements.** **AMM HAZ-5a. Spill Prevention Countermeasure and Control Plan.**	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
BioMar-7: *Discharge of Ballast Water* A release of ballast water containing exotic species could introduce exotic species that directly compete with native organisms, affecting the viability of native species.	Class III	**AMM BioMar-7. Compliance with Regulations.** The Applicant would conduct discharges from the FSRU and LNG tankers in compliance with all applicable State and Federal regulations.	Less than significant
BioMar-8: *Increase/Decrease in Fish Abundance or Commercially Important Benthic Species* Commercially important fish species could potentially avoid the Project site due to increased human activity and Project-related noise. Additionally, fish and other benthic species could be attracted to the low relief habitat provided by the subsea pipeline decreasing abundance in other heavily fished areas.	Class III	None.	Less than significant
BioMar-9: *Collision between Project Vessels and Marine Mammals or Sea Turtles* Construction and operation vessels could collide with marine mammals or sea turtles resting on the ocean surface, resulting in injury or mortality.	Class II	**AMM BioMar-9a**. **Avoid Offshore Construction During Migration Season.** The Applicant would conduct offshore construction activities outside the gray whale migration season (June 1-November 30). **AMM BioMar-9b**. **Marine Mammal Monitoring**. All construction and operational vessels would carry two qualified marine monitors to provide a 360-degree view and watch for and alert vessel crews of the presence of marine mammals during construction activities.	Less than significant
BioMar-10: *Noise Disrupting Marine Mammal Behavior* Noise from construction and operation vessels or equipment could disrupt migrations; interfere with or mask communications, prey and predator detection, and/or navigation; cause adverse behavioral changes; or result in temporary or permanent hearing loss.	Class II	**Also applies here (see applicable Impact):** **AMM BioMar-9a**. **Avoid Offshore Construction During Migration Season**. **AMM BioMar-9b**. **Marine Mammal Monitoring**.	Less than significant
BioMar-11: *Entanglement of Marine Mammals and Turtles*	Class II	**AMM BioMar-9b**. **Marine Mammal Monitoring** applies here. **MM BioMar 11-a. Deployment of Potentially Entangling**	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
Marine mammals or sea turtles could become entangled in construction or operation equipment, causing injury or mortality.		**Material.** Any material that has the potential for entangling marine mammals or sea turtles shall be deployed only as long as necessary to perform its task, and then immediately removed from the Project site. **MM BioMar 11b. Notification.** In the unlikely event that a marine mammal or sea turtle is entangled, the operator shall immediately notify the stranding coordinator at NOAA Fisheries so that a rescue effort may be initiated.	
BioMar-12: *Release of LNG, Natural Gas, Fuel, or Oil Causes Injury or Mortality of Marine Mammals* A release of LNG, natural gas, fuel, or oil could cause injury or mortality of marine mammals through direct contact or ingestion of the material.	Class II	**Also applies here (see applicable Impact):** **MM BioMar-5a. Control Measures.**	Less than significant
BioMar-13: *Construction or Operation Vessels Act as an Attractive Nuisance, Disrupting Marine Mammal, Sea Turtle, or Seabird Behavior* Lights and debris from the FSRU and vessels could attract marine mammals, sea turtles, or seabirds, rendering them vulnerable to other impacts such as collision, noise, entanglement, spills, and predation.	Class II	**MM BioMar-13a. Construction/Operations Lighting Control.** A plan shall be submitted for approval by the USCG and the CSLC with review by local governments at least sixty days prior to construction.	Less than significant
BioMar-14: *Construction or Operation Vessels Act as an Attractive Nuisance, Disrupting Marine Mammal, Sea Turtle, or Seabird Behavior* Construction or operational activities could alter sensitive habitats such that marine mammal, sea turtle, or seabird reproduction could be reduced, prey species could be eliminated, or animals might avoid an area.	Class III	None.	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
TERRESTRIAL BIOLOGY (Section 4.8)			
TerrBio-1: *Temporary Increase in Sedimentation* Construction activities could cause increased sedimentation and soil erosion, and expose contaminated soils during trenching activities. The HDD procedures to install the pipeline beneath Ormond Beach may present remote potential for drilling fluid seepage. These construction methods could cause habitat degradation to sensitive plant species or wetlands.	Class II	**AMM TerrBio-1a. Erosion Control.** To minimize sedimentation, the Applicant would implement measures during construction. **MM TerrBio-1b. Spill Containment/ Management.** The Applicant shall implement the following measures to control and manage spills **Also applies here (see applicable Impact):** **MM WAT-5a: Prepare and Implement HDD Contingency Plan.** **MM WAT-5b. Strategic Location for Drilling Muds and Cuttings Pit.**	Less than significant
TerrBio-2: *Temporary or Permanent Impacts Regarding Construction, Operations, and Maintenance Effects on Rare and Special Status Plants* Upland vegetation removal during onshore pipeline construction, maintenance, and repair activities could result in the loss of special status plants.	Class III	**AMM TerrBio-2a. Pre-Construction Surveys.** The Applicant would conduct pre-construction, in-season surveys according to appropriate survey protocols for special status species, and any federally listed species specified by the USFWS or the CDFG. **AMM TerrBio-2b. Biological Resources Mitigation and Monitoring Plan (BRMIMP).** Surveys would be conducted within any areas potentially impacted by Project activities during construction or operation where special status species potentially occur. **AMM TerrBio-2c. Employee Environmental Awareness Program (EEAP).** The Applicant would conduct an employee awareness program before groundbreaking to explain the applicable endangered species laws and any endangered species concerns to contractors working in the area. **AMM TerrBio-2d. Biological Monitoring.** The Applicant would use a qualified Biological Monitor to conduct and supervise the EEAP program and to conduct on-site biological monitoring. **AMM TerrBio-2e. Confine Activity to Identified Right-of-Way (ROW).** The Applicant would limit all proposed roadway construction to the existing roadway surface wherever special status plant species or habitats occur adjacent to the roadway.	Less than significant
TerrBio-3: *Temporary or Permanent*	Class II	**AMM TerrBio-3a. Seed Bank Retention.** The Applicant would	Less than

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
Vegetation Loss Due to Removal/Habitat Removal Upland vegetation removal during onshore pipeline construction and maintenance activities could cause temporary or permanent loss of upland natural vegetation, altering wildlife habitat and increasing erosion potential.		implement measures for seed bank retention. **MM TerrBio-3b. Tree Avoidance and Replacement.** The Applicant shall, to the extent possible, avoid, minimize, and compensate for impacts on trees. **MM TerrBio-3c**. **Riparian Avoidance and Restoration.** The Applicant shall avoid, minimize, and compensate for impacts on riparian habitat during construction due to trenching, open cut crossings of waters of the United States, and HDD pit excavation.	significant
TerrBio-4: *Temporary or Permanent Changes to Wetlands or Waters of the United States During Construction* Construction, such as trenching, in wetlands or waters of the United States could remove vegetation, disrupt the hydrology of the wetlands within and adjacent to the construction area, or alter the habitat for special status plant species.	Class II	**MM TerrBio-4a**. **Avoid, Minimize, or Reduce Impacts on Wetlands.** Impacts on wetlands or waters of the United States that provide habitat for special status plant species shall be avoided, minimized, or reduced.	Less than significant
TerrBio-5: *Permanent Impact Caused by Noxious Weed Invasion* Construction-related disturbance could provide an opportunity and seedbed for the invasion of weeds, which could adversely affect special status plant species or habitats, and upland vegetation.	Class III	**AMM TerrBio-5a. Weed Management.** The Applicant would implement measures to prevent the spread of invasive weeds.	Less than significant
TerrBio-6: *Temporary Impacts on Wildlife Habitat Removal* Construction activities could temporarily remove wildlife habitat, thereby reducing its availability to local wildlife populations.	Class II	**AMM TerrBio-6a. Minimize Disturbance at Water Crossings.** The Applicant would not perform open-trench crossings at any stream, wetland feature, or other waters of the United States unless otherwise identified by required permits. **MM TerrBio-6b**. **Species Surveys.** The Applicant shall conduct focused habitat evaluations and species surveys to determine the potential for the occurrence of special status species or their habitats in the proposed Project area. **Also applies here (see applicable Impact):** **MM WAT-5a: Prepare and Implement HDD Contingency Plan.**	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
		MM WAT-5b. Strategic Location for Drilling Muds and Cuttings Pit.	
TerrBio-7: *Direct Permanent Impact on Wildlife Mortality* Construction activities associated with pipeline installation, staging areas, HDD locations, and access roads could cause the mortality of small mammals, reptiles, and other less-mobile species. Direct mortality could also be associated with increased human activity, particularly involving wildlife habitat removal and animal/vehicle collisions.	Class III	**AMM TerrBio-7a. Traffic Control.** The Applicant shall implement traffic management efforts as defined. **AMM TerrBio-7b. Work Area Enforcement.** The Applicant would follow certain measures to ensure site safety. **AMM TerrBio-7c. Trash Removal.** The Applicant would implement measures to ensure all trash would be properly contained, removed, and disposed of regularly.	Less than significant
TerrBio-8: *Temporary Wildlife Disturbance from Increased Human Presence* Human disturbance during Project construction, operations, and maintenance could temporarily displace wildlife, cause them to avoid preferred habitat areas, or reduce their reproductive success.	Class III	**Applies here (see applicable Impact):** **AMM TerrBio-2a. Pre-Construction Surveys** **AMM TerrBio-2b. Biological Resources Mitigation and Monitoring Plan (BRMIMP)** **AMM TerrBio-2c. Employee Environmental Awareness Program (EEAP)** **AMM TerrBio-2d. Biological Monitoring** **AMM TerrBio-2e. Confine Activity to Identified Right-of-Way (ROW)** **MM TerrBio-9c. Protect Specified Bird Species**	Less than significant
TerrBio-9: *Temporary or Permanent Construction Impacts on Sensitive Species and/or Habitats* Construction impacts could harass species, which could result in a take of an endangered species, causing a permanent impact.	Class II	**MM TerrBio-9a. Establish Buffer Zones.** The specific buffer zone distance shall be determined by the appropriate resource agencies (the CDFG and the USFWS). **MM TerrBio-9b. Protect Special Status Wildlife.** Where construction occurs within or near known or potential special status species habitat, the Applicant shall perform the actions as defined. **MM TerrBio-9c. Protect Specified Bird Species.** Where construction is proposed to occur near riparian or marsh habitats that support special status bird species, the Applicant shall limit construction periods to times outside the respective breeding	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
		season of the affected species.	
CULTURAL RESOURCES (Section 4.9)			
Offshore			
CUL-1: *Marine Archaeological Sites and Artifacts* The Project could impact cultural resources in offshore Project areas.	Class III	**AMM CUL-1a. Archaeological surveys** for the purpose of ground truthing would be performed to confirm the location of and gather further information on the submerged objects determined to be subject to potential impact from the Project.	Less than significant
Onshore/Offshore			
CUL-2: *Native American Values* The Project could impact resources that are of value to Native American culture and heritage, particularly descendents of the Ventura Chumash.	Class III	**AMM CUL-2a. Site Avoidance**. The Applicant would avoid identified sites to the maximum feasible extent, conduct monitoring, and adhere to State of California burial remains legislation as well as Native American Graves Protection and Repatriation Act (NAGPRA). **AMM CUL-2b. Native American Values.** Monitoring disturbance of archaeological sites, curation of artifacts, implementation of specified procedures, minimization of impacts to native plants.	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
Onshore			
CUL-3: *Terrestrial Historic or Archaeological Resources* The Project could impact cultural resources in onshore Project areas.	Class III	**AMM CUL-3a. Site Avoidance/Protection/ Analysis.** Adverse impacts would be mitigated by site avoidance, site protection, and collection, analysis, and documentation of data from the site so that important research questions may be addressed. **AMM CUL-3b. Surveys.** Pedestrian surveys would be conducted by a qualified archaeologist prior to all ground-disturbing construction activities along parts of the alignments that have not been previously surveyed in order to complete the inventory of archaeological sites. **AMM CUL-3c. Native American Representative.** Surveys within the City of Oxnard would include the presence of a Native American Representative as mandated by City guidelines. **AMM CUL-3d. Survey Areas.** Several areas would be surveyed on the Center Road Pipeline Route before issuance of permits. **AMM CUL-3e. Pedestrian Survey.** A pedestrian survey would be conducted in specific areas in the Line 225 Pipeline Loop. **AMM CUL-3f. Monitoring.** A qualified archaeologist would monitor all construction within 328 feet (100 m) of archaeological sites and areas with high potential for the occurrence of sites buried under alluvium. **AMM CUL-3g. Cultural Resources Management Plan.** To ensure compliance with mitigation measures, a cultural resources management plan (CRMP) would be developed pursuant to all relevant local, State, and Federal cultural resources guidelines and criteria.	Less than significant
GEOLOGY (Section 4.11)			
GEO-1: *Increased Erosion, Differential Compaction, or Scour* Construction activities could temporarily worsen existing unfavorable geologic conditions.	Class II	**AMM GEO-1a. Drilling Location**. For HDD drilling at the shore crossing, the entry and exit points of the drilling would be outside of the area affected by normal storms. **MM GEO-1b. Backfilling and Compaction**. Proper backfilling and compaction, as defined by standard construction practices, comparable to existing conditions shall be done to prevent	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
		preferential flow paths, erosion, or subsidence. **MM GEO-1c. Design and Monitoring**. Proper design and monitoring of the drilling mud properties, and sufficient burial depth, shall be conducted to minimize the probability of the occurrence of a release of drilling muds. **MM GEO-1d. Trenching and Construction**. During trenching and construction activities, erosion control measures, such as straw bails, shall be implemented to keep water from entering the trench. **MM GEO-1e. Compacting and Grading**. Following installation of the pipeline system, the trench shall be compacted and graded to pre-existing contours and revegetated/restored to pre-existing conditions.	
GEO-2: *Disturbing or Destroying Paleontological Resources* Construction activities could disturb or destroy paleontological resources; such impacts are typically permanent	Class II	**MM GEO-2a. Inspection.** Paleontological inspection to be conducted prior to excavation in suspect areas; paleontological monitoring by qualified paleontologist during excavation. **Also applies here (see applicable Impact):** **AMM GEO-3a. Fault Zone Avoidance.** **AMM GEO-3b. Pipeline Flexibility.** **MM GEO-3c. Geotechnical Studies.** **MM GEO-3d. Design and Operational Procedures**.	Less than significant
GEO-3: *Damage Due to Direct Rupture along Fault Lines* Damage to pipelines or other facilities could occur due to direct rupture (ground offset) along fault lines	Class II	**AMM GEO-3a. Fault Zone Avoidance.** Avoid crossing known active fault zones, where possible. **AMM GEO-3b. Pipeline Flexibility.** Install offshore pipelines directly on seabed. **MM GEO-3c. Geotechnical Studies.** Complete final geotechnical studies at suspected active fault crossings. **MM GEO-3d. Design and Operational Procedures**. Follow specified guidelines; ensure pipeline design includes evaluation of engineered fill, pipe wall thickness, shutoff valves, and seismic switches/alarms.	Less than significant
GEO-4: *Damage to Pipelines and Associated Facilities from Surface Shaking*	Class II	**MM GEO-4a. Design for Ground Shaking.** Complete proper seismic design; follow specified guidelines.	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
Ground shaking from earthquakes, which is of a transitory and sporadic nature, could damage pipelines or associated facilities.			
GEO-5: *Damage to Pipelines from Landslides, Liquefaction, Subsidence, Sand Migration, or Turbidity Currents* Mass movement, which is of a transitory and sporadic nature, could damage pipelines or structures	Class II	**AMM GEO-5a. Avoid Areas of Mass Movement.** Avoid areas where soil is susceptible to mass movement and areas with steep slopes; design pipeline to withstand pressures resulting from mass movement and allow flexibility.	Less than significant
GEO-6: *Damage to Pipelines from Tsunamis* Tsunamis, which are transitory and sporadic in nature, could damage near-shore pipelines or facilities due to the typical force and erosive nature of these storms.	Class III	**AMM GEO-6a. Pipeline Burial.** Bury shore crossing pipelines to sufficient depth to avoid damage from tsunamis.	Less than significant
GEO-7: *Damage to Pipelines from Shallow Gas Seeps* Damage to pipelines and/or other facilities due to shallow gas seeps along the pipeline route could threaten the structural integrity of the pipeline or facility system, although this impact is unlikely.	Class III	None.	Less than significant
GEO-8: *Potential to Change the Transport of Sediment in Offshore Areas* A surface pipeline could have a short or long-term, minor impact on the natural flow of sediment parallel to the shoreline.	Class III	**MM GEO-8a. Pipeline Location and Burial to Avoid Sediment Transport.** Near shore section of pipeline will be buried; offshore pipeline route selected to avoid areas of sediment transport or be parallel to primary sediment transport direction.	Less than significant
HAZARDOUS MATERIALS (Section 4.12)			
HAZ-1: *Potential Hazardous Materials Spills due to Offshore Construction* Marine activities associated with site preparation, transportation, and installation of the mooring system, FSRU, and subsea	Class II	**AMM HAZ-1a. Develop and Implement a Curtailment Plan.** Develop and implement critical operations and curtailment plan. **AMM HAZ-1b. Absorbent Materials**. Maintain onboard sufficient quantities of absorbent materials to contain and cleanup small spills.	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
pipeline could result in a temporary hazardous materials or oil spill to marine waters.		**MM HAZ-1c. Material Safety Data Sheets**. Maintain Material Safety Data Sheets (MSDS) for all hazardous materials stored onboard.	
HAZ-2: *Potential Hazardous Materials Spills due to Offshore Operations* Improper handling of hazardous materials or leaks in containers on the FSRU could temporarily result in a release to the marine environment or exposure of workers or the public.	Class III	**AMM HAZ-2a. Manage Used Oil in Accordance with USEPA and State Requirements.** Hazardous materials to be managed in accordance with facility-specific SPCC Plan; materials to be stored within secondary containment; FSRU to maintain sufficient quantities of absorbent materials to contain and cleanup small spills; personnel to be trained in control and cleanup of spills; materials to be stored in Department of Transportation (DOT)-approved containers. **AMM HAZ-2b. Storage of Hazardous Materials.** Hazardous materials to be stored in manner specified by manufacturer and in accordance with Federal regulations and internationally recognized codes and standards.	Less than significant
HAZ-3: *Release of Existing Contaminants from Sediments, Soils, or Groundwater* Construction activities could unearth existing contaminated sites onshore and offshore, causing potential temporary health hazards to construction workers, the public, and marine and terrestrial ecology.	Class II	**AMM HAZ-3a. Follow Standard Industry Practices.** The Applicant would follow standard industry practices and OSHA regulations to limit access to construction area by unauthorized personnel. **AMM HAZ-3b. Provide OSHA Training**. Construction contractor to provide workers trained in accordance with OSHA Hazardous Waste Operations requirements. **AMM HAZ-3c. Prepare a Project-specific Health and Safety Plan**. Prepare project-specific health and safety plan to include identification of possible hazardous materials; personnel working in contaminated areas to be trained for handing hazardous wastes. **AMM HAZ-3d. Prevent Migration of Contaminated Soils**. Follow standard industry practices and OSHA regulations to prevent migration of contaminated soils/material off site. **MM HAZ-3e. Cleanup of Soil and Groundwater.** Coordinate with DTSC to ensure OU-2 is certified clean, identify status of groundwater remediation for OU-7, and determine whether additional surveys or sampling necessary for areas to be disturbed	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
		by pipeline construction.	
HAZ-4: *Release of Methane or Other Flammable or Toxic Gases from Nearby Landfills* Construction in the pipeline right-of-way (ROW) could release methane or other flammable or toxic gases from nearby landfills, causing potential health hazards to construction workers and the public; however, this potential impact is unlikely.	Class III	None.	
HAZ-5: *Potential Hazardous Materials Spills due to Onshore Construction or Transportation* Activities associated with onshore construction and drilling could result in an accidental spill of hazardous materials or oil.	Class II	**AMM HAZ-5a. Prepared Spill Prevention Countermeasure and Control Plan.** Train workers to recognize and respond to spills and notify regulatory agencies; maintain emergency spill kit. **AMM HAZ-5b. Use Best Management Practices.** Store hazardous materials in appropriate containers within secondary containment, in fenced/secure areas, and protected from exposure; incompatible materials to be segregated; dispose of wastes in accordance with federal and state regulations. **AMM HAZ-5c. Appropriate Disposal.** Place absorbent materials or drip pans beneath vehicles and equipment prior to maintenance or refueling; materials drained from equipment to be collected in spill-proof containers and disposed at appropriate disposal or recycling facility. **AMM HAZ-5d. Maintain Spill Kits.** The Applicant would keep a proper spill kit accessible at each construction location. **MM HAZ-5e. Maintain Equipment.** Maintain equipment in good operating condition; remove or repair equipment with chronic/continuous leaks.	Less than significant
HAZ-6: *Accidental Release of Drilling Muds During HDD* HDD could result in a release of drilling muds, a release of drilling fluids from the borehole at a fracture in the ground.	Class II	**Also applies here (see applicable Impact):** **M WAT-5a: Prepare and Implement HDD Contingency Plan.** **MM WAT-5b. Strategic Location for Drilling Muds and Cuttings Pit.**	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
HAZ-7: *Potential Hazardous Materials Spills due to Onshore Operations* During onshore construction, operations, and maintenance activities, accidents or improper handling, transport, and storage of hazardous materials could result in spills, exposing workers or the public to hazardous materials.	Class III	**Also applies here (see applicable Impact):** **AMM HAZ-5a. Prepared Spill Prevention Countermeasure and Control Plan.** **AMM HAZ-5b. Use Best Management Practices.** **AMM HAZ-5c. Appropriate Disposal.** **AMM HAZ-5d. Maintain Spill Kits.** **MM HAZ-5e. Maintain Equipment**.	Less than significant
HAZ-8: *Potential Disturbance or Detonation of UXO due to Onshore or Offshore Construction* Offshore pipeline installation and onshore pipeline construction activities could encounter UXO, causing an explosion that could result in serious injuries or fatalities to workers or the public, and—for offshore locations—serious injuries or fatalities to marine life from subsurface blast pressures.	Class II	**MM HAZ-8a. Surveys.** In offshore areas along pipeline route, conduct surveys for presence of UXO. **MM HAZ-8b. Coordination with the California Department of Toxic Substances Control.** For parts of Line 225 Loop on/near Whittacker-Bermite site, coordinate with DTSC.	Less than significant
LAND USE (Section 4.13)			
LU-1: *Changes in Land Use* Implementation of the Project would change an existing land use.	Class III	**Applies here (see applicable Impact):** **AMM AGR-1a. Compensation**. **MM AGR-1b. Compensation for Temporary Loss of Agricultural Land**.	Less than significant
LU-2: *Nuisances to Residents and Businesses* Construction may cause temporary nuisances to nearby residents and businesses.	Class III	**Applies here (see applicable Impact):** **AMM PS-6a. Applicant Would Construct all Pipelines to Meet Class 3 Design Criteria.** **MM PS-7a. Define HCA for any PIR that includes one or more mobile homes. Assist residents to improve emergency planning**. **MM PS-7b. Define an HCA for areas where the PIR includes part or all of a manufactured-home residential community**. **MM PS-7c. Implement Public Education/Awareness Program.** **MM PS-8a. Define HCA**.	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
NOISE (Section 4.14)			
Offshore			
NOI-1: *Noise Generated During the Installation of the Floating Storage and Regasification Unit (FSRU) and Offshore Pipeline* Noise generated by vessels or equipment during installation of the mooring system, FSRU, and offshore pipeline could result in temporary increases in noise levels in the area, which could impact sensitive noise receptors such as recreational boaters or fishers.	Class II	**MM NOI-1a. Efficient Equipment Usage.** Operate construction equipment only on an as-needed basis during this period, and maintain it to the manufacturer's specifications.	Less than significant
NOI-2: *Long-Term Noise Generated During FSRU Operations* Recreational boaters and fishers at certain distances from the facility could hear noise generated by FSRU operations over the long-term.	Class II	**MM NOI-2a. Silencers and Shielding.** Use silencers and shielding on equipment on the FSRU to reduce noise emissions.	Less than significant
NOI-3: *Temporary Noise Generated by Support Vessels During Offshore Operations* Tankers, shuttle vessels, or helicopters could temporarily increase noise levels for sensitive receptors, such as recreational boaters and fishers.	Class II	**MM NOI-3a. Limited Trips.** The Applicant shall limit the number of trips by utilizing the full-capacity shuttles as much as possible. **MM NOI-3b. Daytime Operations.** The Applicant shall operate shuttles and helicopters during daytime hours, except during emergencies.	Less than significant
Onshore			
NOI-4: *Temporary Noise Generated During Horizontal Directional Drilling (HDD)* HDD could temporarily increase noise levels for sensitive receptors. Noise levels may temporarily exceed county and/or city noise ordinances or permit conditions.	Class II	**AMM NOI-4a. Monitor.** The work area would be monitored for noise levels. **AMM NOI-4b. Enclose power unit.** The drilling rig power unit would be enclosed. **AMM NOI 4c. Noise Barriers.** The drilling rig would be partially enclosed or noise barriers would be place around it. **AMM NOI 4d. Enclose mud pumps and engines.** The mud pumps and associated engines would be partially or totally	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
		enclosed. **AMM NOI 4e. Enclose generator sets.** Generator sets would be totally enclosed or acoustically packaged generator sets would be used.	
		AMM NOI 4f. Partially enclose mud mixing. Mud mixing and cleaning equipment would be partially enclosed or noise barriers would be placed around this equipment. **AMM NOI 4g. Provide engine compartment treatments.** Engine compartment treatments would be provided for mobile cranes and boom trucks. **AMM NOI 4h. Modify backup alarms.** Backup alarms on mobile equipment would be modified. **AMM NOI 4i. Orient loading bins.** Loading bins would be oriented to minimize noise impacts on adjacent areas. **AMM NOI 4j. Restrict use of mobile equipment.** Use of mobile equipment would be restricted during nighttime hours. **AMM NOI 4k. Enclose light set engines**. Engines for the light sets would be totally enclosed. **AMM NOI 4l. Temporary hay bales as noise barriers.** Hay bales would be placed on site as a temporary noise barrier. **AMM NOI 4m. Place silencers on all engines.** Silencers on all engines would be placed on all equipment where possible. **MM NOI 4n. Use noise blankets.** During Project construction noise blankets shall be used to fully enclose equipment associated with tunneling. **MM NOI 4o. Prohibit construction work near residences.** Construction would be limited to those times allowed under local noise ordinances. **MM NOI 4p. Limit heavy equipment activity near residences.** Heavy equipment activity adjacent to residences shall be limited to the shortest possible period required to complete pipeline installation. **MM NOI 4q Cover the equipment engine.** The equipment engine shall be covered and the Applicant shall ensure that	

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
		mufflers are in good working condition.	
NOI-5: *Noise Generated During Construction of the Onshore Pipeline* Site preparation, pipeline installation, and construction of aboveground facilities could temporarily increase noise levels for sensitive receptors, such as schools or residences. Noise levels may exceed county and/or city noise ordinances or permit conditions during the installation of the onshore pipeline and associated structures.	Class II	**MM NOI-5a. Care of Equipment.** The equipment engine shall be covered and the Applicant shall ensure that mufflers are in good working condition. **MM NOI-5b. Restricted Work Hours.** Work hours shall be restricted for all construction activities involving motorized equipment from 7 a.m. to 7 p.m. Monday through Saturday. **MM NOI-5c. Post Signs.** The Applicant shall post signs along the construction right-of-way (ROW) with approximate schedule and contact information. **MM NOI-5d. Equipment Location.** The Applicant shall locate stationary equipment, such as compressors and welding machines, away from the noise receptors to the extent practicable.	Less than significant
NOI-6: *Noise Generated by Traveling to the Construction Site* Additional vehicular traffic carrying workers, equipment, and materials to the construction sites could temporarily increase noise levels for residences, schools, places of worships, or hospitals.	Class III	None.	Less than significant
NOI-7: *Noise Generated During Operations Onshore* Operations of the aboveground facilities may exceed county and/or city noise ordinances or permit conditions for the long-term	Class II	**Applies here (see applicable Impact):** **MM NOI-5a. Care of Equipment.** **MM NOI-5b. Restricted Work Hours**. **MM NOI-5c. Post Signs**. **MM NOI-5d. Equipment Location.**	Less than significant
RECREATION (Section 4.16)			
Offshore			
REC-1: *Temporary Restrictions on Offshore Recreational Fishing During Construction* Construction activities would temporarily restrict recreational marine fishing	Class III	None.	Less than significant
REC-2: *Restricted Recreational Fishing Due to*	Class III	**AMM REC-2a. Advance Notice.** The applicant would provide a	Less than

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
Safety/Security Zone Operational activities could restrict recreational fishing and boating because of the creation of a 1,640-foot (500 m) safety/security zone around the FSRU and LNG vessels.		two-day advance notice of LNG carriers scheduled for transit at local ports.	significant
REC-3: *Alteration of the Offshore Recreational Experience During Operations* The presence of the Project would alter the recreational experience of recreational boaters, including visitors on whale-watching trips and other visitors to the CINP.	Class I	**No maximum feasible mitigation measures available to reduce significant impact.**	Significant
Onshore			
REC-4: *Temporary Restriction and Deterrence of Recreational Activities at Ormond Beach During Construction* Construction activities could temporarily restrict fishing, surfing, swimming, beachcombing, and other recreation at Ormond Beach, at other beaches, or in the ocean because of the noise, dust, and light generated during construction of the HDD exit point and the Ormond Beach Metering Station.	Class III	**MM REC-4a. Parking and Access Plan.** The Applicant shall ensure that all construction-related parking would be restricted to the Reliant site and would not restrict beach access parking.	Less than significant
REC-5: *Temporary Deterrence of Park Use Due to Traffic Congestion* Construction activities could temporarily increase traffic congestion in the general area of parks in the vicinity of pipeline construction.	Class III	**AMM REC-5a. Staging Area Locations.** Staging areas would be located at least 1 mile (1.6 km) away from park and recreation areas. **Also applies here (see applicable Impact):** **MM Trans-1a. Traffic Control Plans.**	Less than significant
REC-6: *Temporary Closure of Recreation Trails* Construction activities would temporarily close multi-use trails along the South Fork Santa Clara River (crossed during construction of the Line 225 Pipeline Loop).	Class III	**MM REC-6a. Signage and Information.** Signs shall be posted and information regarding the trail closures disseminated to the public that states how long the trail will be closed, when it will be restored, and describes alternate routes. **MM REC-6b. Trail Restoration.** The Applicant shall restore the multi-use trail along the south fork of the Santa Clara River to	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
		its original condition before construction.	
SOCIOECONOMICS (Section 4.17)			
Socio-1: *Small Increased Demand for Public Services* The Project would cause a slight increased demand for public services during construction and operations	Class III	None.	Less than significant
Socio-2: *Increased Demand for Housing* The influx of non-local workers could reduce the availability of accommodations in the Project area, particularly among low-cost categories.	Class III	None.	Less than significant
Socio-3: *Temporary Disruption of Onshore Commercial and Tourist Activities* Construction activities could disrupt access to commercial and tourist establishments and events, or deter attendance.	Class III	**AMM Socio-3a**. **Scheduling to avoid impacts to tourism.** Construction would be scheduled through heavily traveled routes around special events to avoid impacts to tourism.	Less than significant
Socio-4: *Temporary Disruption of Local Businesses During Onshore Pipeline Construction* Access to businesses along the right-of-way, particularly roadside produce stands, may be reduced during onshore pipeline construction.	Class III	**AMM Socio-4a. Maintain Access.** Access to businesses, including roadside produce stands, would be maintained at all times.	Less than significant
Socio-5: *Increase in Tax Revenue from Construction* Construction would result in a beneficial impact on local tax revenue.	Class IV	None.	Beneficial
Socio-6: *Increase in Tax Revenue during Operations* Operations would result in a beneficial impact on local tax revenue.	Class IV	None.	Beneficial
Socio- 7: *Decrease in Catch Revenues for Commercial Fisheries*	Class II	**AMM Socio-7a. Compensation for Lost Gear.** The Applicant would negotiate mitigation for impacts on fishers, according to the	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
The long-term and temporary exclusion of commercial fishers from fishing grounds could decrease catch revenues for commercial fisheries.		existing guidelines for lost or damaged gear. **MM Socio-7b. Arbitration.** If there is a complaint by a fisher related to impacts from the Project, a mutually agreed-upon settlement shall be reached between the Applicant and injured party.	
Socio-8: *Increase in Regional Fishing Pressure* The permanent exclusion of commercial fishing from fishing grounds could increase fishing pressure in other areas or reduce the catch, resulting in negative economic impacts.	Class III	None.	Less than significant
Socio-9: *Decreased Commercial Fisheries Revenues* The loss of commercial fishing gear from pipelines and supply boat traffic could decrease commercial fisheries revenues	Class II	**Applies here (see applicable Impact):** **AMM MT-1a. Notice to Mariners.** **AMM MT-1b. Safety Boat Warnings.** **AMM MT-1c. Automatic Identification System**. **MM MT-1d. Notices to Mariners**. **MM MT-1e. Securite Broadcasts.** **MM MT-1f. Light and Sound Signals**. **MM MT-1g. Safety Boat**. **AMM Socio-7a. Compensation for Lost Gear.** **MM Socio-7b. Arbitration**.	Less than significant
TRANSPORTATION (Section 4.18)			
Trans-1: *Temporary Traffic Lane Closures.* The Project could cause temporary lane closures, disrupting local traffic flow.	Class II	**MM Trans-1a. Traffic Control Plans.** Develop and implement two traffic control plans during construction. **MM Trans-1b. Fund Inspection Position.** Fund at least one inspection position during construction plus one month for each pipeline segment.	Less than significant
Trans-2: *Temporary Reduced On-Street Parking Access* Construction could temporarily restrict residential on-street parking access	Class III	None.	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
Trans-3: *Temporary Closure of Bike Routes.* Construction could result in temporary closure and/or restricted access to bike paths crossed by the onshore pipelines.	Class III	**MM Trans-1a. Traffic Control Plans.**	Less than significant
Trans-4: *Temporary Delays for Transit and Railway Routes.* HDD activities, in-shoulder construction, and lane closures could delay normal bus routes and disrupt railway routes.	Class II	**MM Trans-4a. Coordination with Local Jurisdictions and Notification.** Coordinate with local jurisdictions to notify residents and transit operators of alternative traffic routes.	Less than significant
Trans-5: *Temporary Increase in Traffic.* During construction, the addition of the construction-related workforce and material deliveries to and from staging areas could increase traffic during peak construction periods.	Class II	**MM Trans-5a. Notification, Schedule Shifts, Carpooling.** Best Management Practices shall be implemented to minimize increases in traffic. **MM Trans-5b. Traffic Control Plans**.	Less than significant
Trans-6: *Temporary Increase in Traffic at Level of Service E Intersection.* Construction of the Center Road Pipeline or Alternate routes would require access to the intersection of Los Angeles Avenue (118) and Santa Clara Avenue, which is already at Level of Service E.	Class II	**MM Trans-6a. Limit Construction Hours.** Construction shall not occur during afternoon peak periods at the intersection.	Less than significant
Trans-7: *Damage to Roads During Construction.* Roads crossed or paralleled by the onshore pipelines, as well as those used to access the Project, could be damaged by increased traffic and heavy equipment.	Class II	**MM Trans-7a. Repair Damage to Roads.** Any damage to roads shall be repaired within 21 days. **MM Trans-7b. Hauling Permits**. Obtain appropriate hauling permits prior to the start of construction.	Less than significant
Trans-8: Project operation would require parking facilities and aboveground patrols, which could result in permanent increased traffic or restricted residential on-street parking access	Class III	**MM Trans-8a. Design Access Points.** Access points to maintenance facilities shall be designed to minimize conflicts with existing routes of travel.	Less than significant
WATER (Section 4.18)			
Offshore – Construction/Installation			
Impact WAT-1: *Temporary Degradation of Offshore Water Quality due to Normal Vessel*	Class III	**AMM WAT-1a. Use Marine Sanitary Device.** Per USCG regulations, all Project vessels would be equipped with a certified	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
Discharges Normal discharges from construction vessels would temporarily degrade offshore water quality		operable Marine Sanitary Device. **MM WAT-1b. Adhere to MARPOL Annex I and IV provisions.** All Project construction vessels shall adhere to the provisions of MARPOL Annex I and IV for the discharge of oil or sewage discharge.	
Impact WAT-2*: Temporary Degradation of Offshore Water* Quality *due to Accidental Discharges* Accidental discharges of untreated petroleum, contaminants, graywater, or sewage from construction and installation vessels activities could temporarily degrade offshore water quality	Class III	**Applies here (see applicable Impact):** **AMM WAT-1a. Use marine sanitary device.** **AMM HAZ-1a. Develop and Implement a Curtailment Plan**. **AMM HAZ-1b. Absorbent Materials**. **MM HAZ-1c. Material Safety Data Sheets**.	Less than significant
Onshore Construction			
Impact WAT-3: *Temporary Degradation of Water Quality due to Hydrostatic Test Water Releases from Offshore Equipment Testing* Release of hydrostatic test water used for testing offshore equipment (product swivels, piping, valves, and offshore pipelines) could temporarily degrade water quality	Class III	**AMM WAT-3a. Use Hydrostatic Test Water from Approved Source.** Hydrostatic test water used for the subsea pipelines would be obtained from an approved source, pursuant to applicable permits. **AMM WAT-3b. Aerate Hydrostatic Test Water.** Hydrostatic water treated with oxygen scavengers would be sufficiently aerated to ensure that the oxygen scavengers are removed before discharge. **AMM WAT-3c. Minimize Use And Regulate Residence Time of Biocide.** The percentage of biocide would be kept sufficiently small and the residence time in the pipelines sufficiently long to render the biocide no longer harmful to sea life upon discharge. **AMM WAT-3d. Environmentally Friendly Oxygen Scavengers.** Every reasonable effort would be made to utilize oxygen scavengers and biocides that are not detrimental to the environment. **MM WAT-3e. Evaluate Hydrostatic Test Water Before Release.** Before discharge, the hydrostatic test water shall be evaluated by a qualified biological monitor. **MM WAT-3f. Monitor the Release of Test Water.** A qualified biological monitor shall be on site prior to and during the release	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
		of the test water.	
Impact WAT-4*: Short-Term Increase in Turbidity or Accidental Unearthing of Contaminants during Offshore Construction* The installation of the FSRU and subsea pipelines could disturb seafloor sediments, causing a short-term increase in turbidity or accidental unearthing of contaminants.	Class III	None.	Less than significant
Impact WAT-5: *Short-Term Degradation of Surface Water or Groundwater Quality due to Accidental Release of Drilling Fluids* Accidental releases of drilling fluids at the shore or stream crossings during construction could degrade surface water or groundwater quality for the short term.	Class II	**MM WAT-5a: Prepare and Implement HDD Contingency Plan.** The Applicant shall develop a release of drilling muds contingency plan to minimize the potential for releases of drilling muds **MM WAT-5b. Strategic Location for Drilling Muds and Cuttings Pit.** The Applicant shall ensure a pit has been excavated at the exit hole to collect and contain the drilling muds and cuttings.	Less than significant
Impact WAT-6*: Short-Term Degradation of Surface Water Quality due to the Release of Contaminants in Hydrostatic Test Water from Testing of Onshore Pipelines* Discharge of hydrostatic water used to test the onshore pipelines could release contaminants to surface water or groundwater, causing short-term degradation of water quality.	Class III	**Applies here (see applicable Impact):** **AMM WAT-3a. Use Hydrostatic Test Water from Approved Source.** **AMM WAT-3b. Aerate Hydrostatic Test Water.** **AMM WAT-3c. Minimize Use And Regulate Residence Time of Biocide.** **AMM WAT-3d. Environmentally Friendly Oxygen Scavengers.** **MM WAT-3e. Evaluate Hydrostatic Test Water Before Release.** **MM WAT-3f. Monitor the Release of Test Water.**	Less than significant
Impact WAT-7: *Short-Term Increase in Erosion due to Construction Activities* HDD and trenching at stream crossings, including release of hydrostatic test water, could cause short-term increases in erosion.	Class II	**MM WAT-7a. Erosion Control Plan.** The Applicant shall develop an Erosion Control Plan and the plan must be submitted to and approved by the CSLC at least 60 days before construction of the Project begins. **MM WAT-7b. Energy Dissipater for** Hydrostatic Test Water Discharge. For the hydrostatic test water discharge, the Applicant shall design and install a suitable energy dissipater at the outlets and design and install suitable channel protection structures	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
		MM WAT-7c. Transport Sediment Spoils Off-Site. Sediment spoils that are not utilized to fill trenches in stream channels shall be transported off site. **MM WAT-7d. Re-establish Contours and Vegetative Cover/Pavement.** Contours and vegetative cover/pavement shall be re-established as soon as practicable following disturbance. **MM WAT-7e. Monitor Stream Crossing Construction.** A qualified biological monitor shall be present at each stream crossing construction site to ensure compliance with applicable permits and mitigation. **Also applies here (see applicable Impact):** **MM WAT-5b. Strategic Location for Drilling Muds and Cuttings Pit.**	
Impact WAT-8*: Degradation of Water Quality due to Normal Release of Treated Discharges During Offshore Operations* Normal releases of graywater, brine, ballast, and other substances could release small amounts of contaminants, including petroleum, detergents, or human waste, to marine waters, although not in excess of water quality standards	**Class III**	**AMM WAT-8a. Treat Sewage.** Sewage from the FSRU would be treated in an International Maritime Organization (IMO)-approved system. **AMM WAT-8b. Treat Graywater.** The graywater shall be treated using filtration to separate particulate matter and ultraviolet (UV) oxidation to destroy dissolved organic materials.	Less than significant
Onshore Operations			
Impact WAT-9: *Degradation of Water Quality due to Accidental Release of Untreated Graywater, Deck Drainage, and other Regulated Discharges that do Not Meet Water Quality Standards* Accidental releases from the FSRU could release small amounts of contaminants, including petroleum, detergents, or human waste, to marine waters, in excess of water quality standards	Class III	**MM WAT-9a. Systems Inspections.** The sewage treatment and oil-water separator systems shall be inspected by a qualified engineer annually to ensure it is functioning properly. **Applies here (see applicable Impact):** **AMM HAZ-1a. Develop and Implement a Curtailment Plan.** **AMM HAZ-1b. Absorbent Materials.** **AMM HAZ-2a. Manage Used Oil in Accordance with USEPA and State Requirements.** **MM HAZ-1c. Material Safety Data Sheets.** **MM HAZ-2b. Storage of Hazardous Materials**.	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result
Impact WAT-10: *Temporary Degradation of Surface Water Quality During Maintenance Activities* Releases of petroleum or other contaminants during maintenance activities could temporarily degrade surface water quality	Class III	**AMM WAT-10a. Best Management Practices (BMPs) at Creek Crossings.** Best management practices such as using silt fencing and hay bales would be employed at all creek crossings for major maintenance activities that could result in spills that could enter surface water pathways. **AMM WAT-10b. Spill Response Plan.** The Applicant would prepare a Spill Response Plan to protect surface water at and near the surface water crossings.	Less than significant
Impact WAT-11: *Short-Term Degradation of Surface Water Quality due to Erosion caused by Regular Maintenance Activities* Regular maintenance of the pipelines could cause erosion and sedimentation of creeks from the use of maintenance vehicles or equipment, leading to short-term violations of water quality standards	Class III	**Applies here (see applicable Impact):** **AMM WAT-10a. Best Management Practices (BMPs) at Creek Crossings**. **AMM WAT-10b. Spill Response Plan**.	Less than significant
ENVIRONMENTAL JUSTICE (Section 4.19)			
EJ-1: *Disproportionate Impact to Minority and Low-Income Community of a Pipeline Accident* There would be a permanent risk of a pipeline rupture that could cause a fire that would disproportionately adversely affect a minority community	Class II	**MM EJ1a**. **Notification in Spanish.** Notification of the public comment meetings shall be delivered directly to those residents within the pipeline's High Consequence Areas in both English and Spanish, and public education instruction and materials shall also be available in English and Spanish. **Also applies here (see applicable Impact):** **AMM PS-6a. Applicant Would Construct all Pipelines to Meet Class 3 Design Criteria.** **MM PS-6c. Include Automatic Shut Down Valves.** **MM PS-7a**. **Define HCA for any PIR that includes one or more mobile homes. Assist residents to improve emergency planning.** **MM PS-7b**. **Define an HCA for areas where the PIR includes part or all of a manufactured-home residential community.** **MM PS-7c**. **Implement Public Education/Awareness Program.** **MM PS-8a. Define HCA.**	Less than significant

Table ES-1 Summary of Impacts and Mitigation Measures

Impact	Impact Class	Applicant Proposed Mitigation Measures (AMM) Agency Recommended Mitigation Measures (MM)	Result

Key to impacts (EIS/EIR section #):

PS	= Public Safety (4.2)	**TerrBIO**	=	Biological Resources–Terrestrial (4.8)	**NOI**	=	Noise (4.14)
MT	= Marine Traffic (4.3)	**CUL**	=	Cultural Resources (4.9)	**REC**	=	Recreation (4.15)
AES	= Aesthetics (4.4)	**ENE**	=	Energy and Minerals (4.10)	**Socio**	=	Socioeconomics (4.16)
AGR	= Agriculture and Soils (4.5)	**GEO**	=	Geologic Resources (4.11)	**Trans**	=	Transportation (4.17)
AIR	= Air Quality (4.6)	**HAZ**	=	Hazardous Materials (4.12)	**WAT**	=	Water Quality and Sediments (4.18)
BIOMar	= Biological Resources–Marine (4.7)	**LU**	=	Land Use (4.13)	**EJ**	=	Environmental Justice (4.19)